ENGINEERING NEWS-RECORD

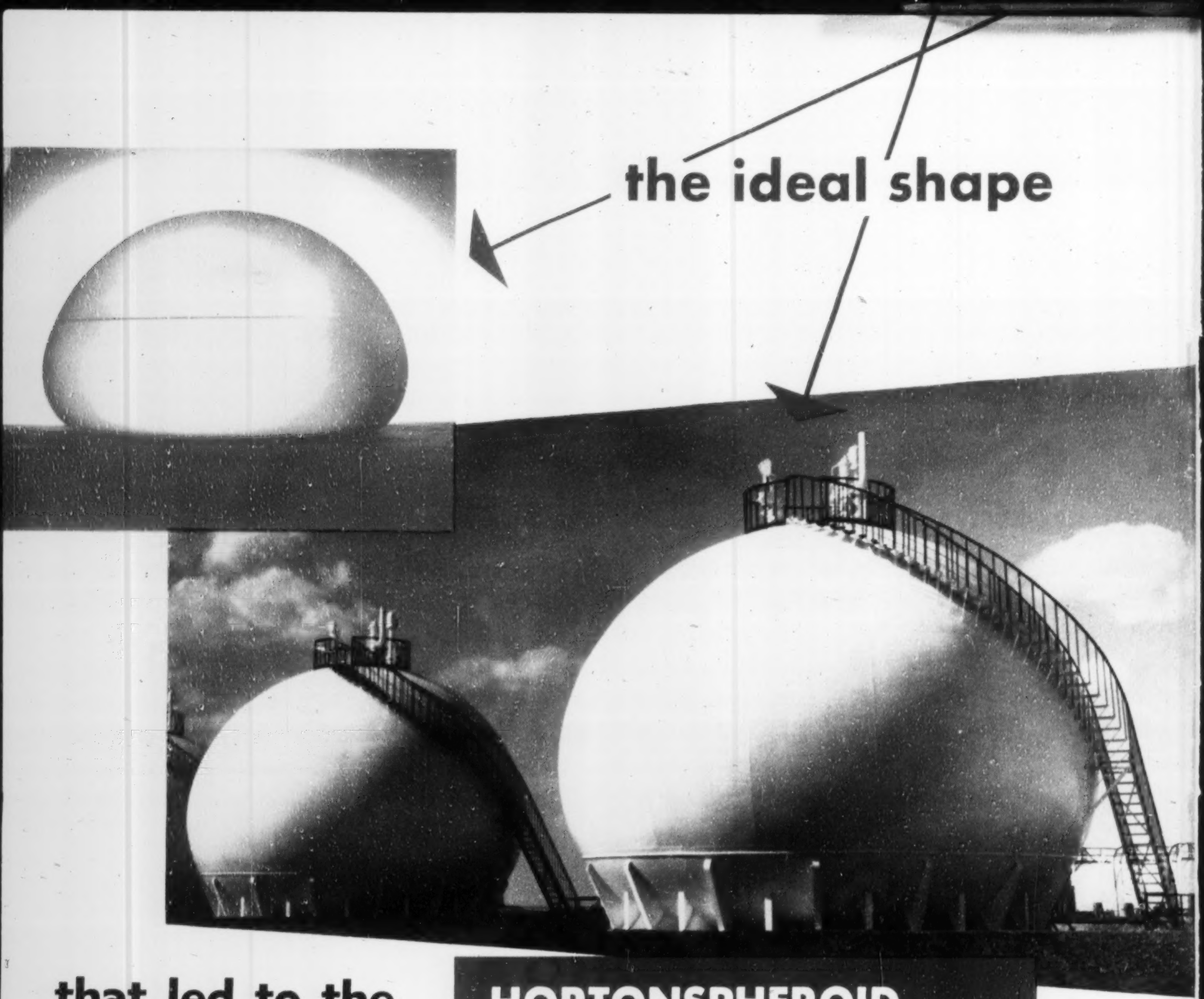
[illegible] YEAR OF PUBLICATION

GEORGE A. FULLER
COMPANY
BUILDING CONSTRUCTION

★
★

A McGRAW-HILL PUBLICATION

E B POWER GS
UNIVERSITY MICROFILMS IN
313 N 1 ST
ANN ARBOR MICH



the ideal shape

that led to the HORTONSPHEROID

A balloon partially filled with water and air under pressure and laid on a table, as in the top view above, becomes spheroidal in shape. The pressure tends to make it spherical, but the weight of the liquid flattens it at the bottom. A Hortonspheroid®, as originally conceived, is built in this shape . . . the *ideal* shape for the storage of liquids under pressure.

The Hortonspheroid is a pressure container that prevents excessive evaporation losses from stored volatile hydrocarbons such as motor gasolines and natural gasolines. Hortonspheroids work on the principle that no loss can occur unless vapor escapes from the vessel.

Plain Hortonspheroids are built in capacities from 2,000 to 40,000-bbls. for pressures from 2½ to 100 lbs. per sq. in. Noded Hortonspheroids are built in sizes from 20,000 to 120,000-bbls. for pressures from 2½ to 20 lbs. For further information, estimates or quotations on Hortonspheroids or any other Horton structure, please write our nearest office. There is no obligation on your part.

CHICAGO BRIDGE & IRON COMPANY

Atlanta, 3 .... 2125 Healey Building
Birmingham, 1 .... 1520 North 50th Street
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Cleveland, 15 .... 2201 Midland Building
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Los Angeles, 17 .... 1511 General Petroleum Building
New York, 6 .... 3311—165 Broadway Building
Philadelphia, 3 .... 1700 Walnut Street Building
Pittsburgh, 19 .... 3212 Alcoa Building
Salt Lake City, 4 .... 512 West 17th South Street
San Francisco, 4 .... 1530—2000 Bush Street
Seattle, 1 .... 1312 Henry Building
Tulsa, 3 .... 1617 Hunt Building

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

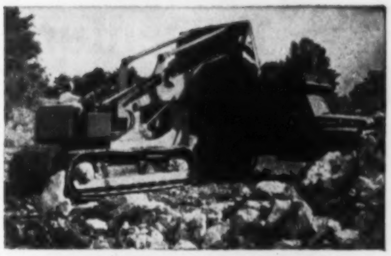
In Canada: HORTON STEEL WORKS LIMITED, FORT ERIE, ONT.

a demonstration will show how you can . . .

cut costs, speed many jobs with this 2-yd. Tractor Shovel

The Tractor Shovel's value in mechanizing many phases of construction has been proved again and again by the versatile Allis-Chalmers 1-yd. HD-5G. The HD-9G, with its larger 2-yd. bucket, offers the same wide range of use with *double* the working capacity.

EXCAVATES BASEMENTS. Efficiently digs, loads materials of all kinds. Shift pattern lets operator go from any forward to any reverse speed with one movement of shift lever . . . for faster loading cycles.



PREPARES RAW LAND with standard 2-yd. bucket, bulldozer blade or rock fork. Removes rocks, clears trees and brush, fills gullies, levels and rough grades. Angledozer blade also available. Rear-mounted scarifier increases efficiency in tough digging.

REDEVELOPS LAND — The HD-9G Tractor Shovel effectively clears and loads rubble from razed slum areas — makes land available for new building projects, parking areas, playgrounds.

BACKFILLS, LEVELS, LANDSCAPES. Fills in plumbers' trenches, around sewer, gas and water pipe — transports excess dirt between houses, fills in around foundations, finish grades, builds driveways.

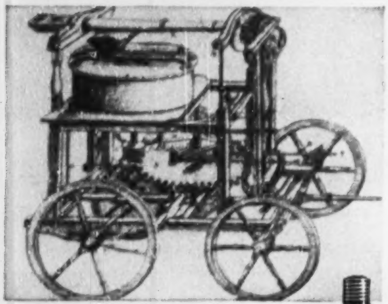
MOVES, LOADS, SPOTS MATERIALS with bucket. Also lifts, loads, skids lumber and pipe — elevates bricks, shingles to roof height. Bucket has 11 ft. 4 in. dumping height. Crane hook also available for special lifting jobs.

HD-9G — 72 drawbar hp.
29,900 lb.
with standard 2-yd.
hydraulic bucket.

Ask your Allis-Chalmers dealer to show how your construction jobs can be mechanized by the HD-9G, or one of the other 1- to 4-yd. Tractor Shovels — or write direct for more information.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

17th century
PENCIL SHARPENER?



2H
1001 J.S. STAEDTLER MARS-LUMOGRAPH <TECHNICO>
2H
2886 J.S. STAEDTLER, INC. MARS LUMOGRAPH
MADE IN GERMANY

Well, whatever it is, complex as it appears, this drawing is not nearly as complex as the engineering drawings of today. The need for drafting precision has increased steadily over the years.

To keep pace with this need, Staedtler has made constant improvement in pencil design and manufacture ever since the first Staedtler pencils were produced in Nurnberg, Germany, in 1662 — about the time the above drawing was made.

Today, the Mars-Lumograph is America's finest imported drawing pencil. In the clutch pencil field, the combination of the new 1001 Mars Technico push-button lead holder and 1904 Mars-Lumograph imported drawing leads insures your having the very best.

The 2886 Mars-Lumograph drawing pencil gives you precise thickness and the blackness of line needed for crisper, cleaner prints. Perfectly graded in 19 degrees—EXEXB to 9H. $1.50 per dozen —less in quantity.

The 1001 Technico Mars-Lumograph push-button lead holder costs no more than ordinary holders, has a noiseless, smooth-working, low-friction clutch mechanism, lightweight wood construction with perfect balance and, built into the push-button cap, a unique lead sharpener. $1.50 each —less in quantity.

1904 Mars-Lumograph Imported Drawing Leads are so opaque that inking-in is not necessary. Leads are ribbbed for firm clutch grip and each has a metal cap which prevents sliding from holder. Available in 18 degrees—EX3 to 9H. $1.20 per dozen—less in quantity.

J.S. STAEDTLER, INC.
27 DICAROLIS COURT
HACKENSACK, NEW JERSEY

ENGINEERING NEWS-RECORD

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Robert F. Boger
Publisher

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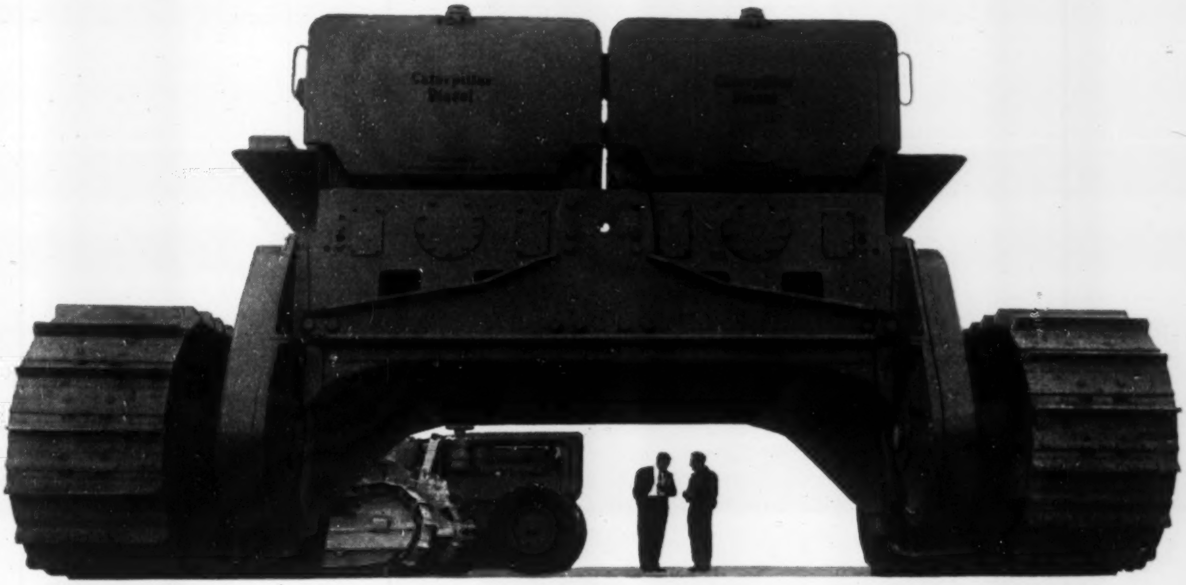
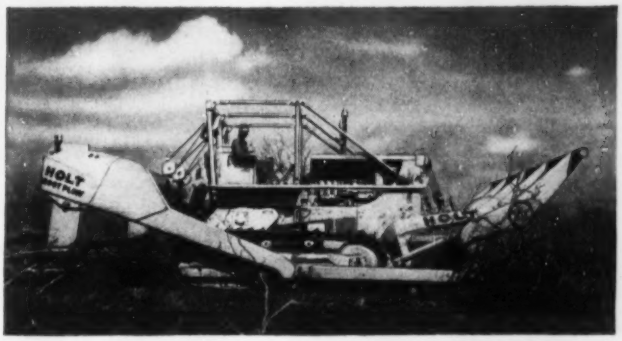
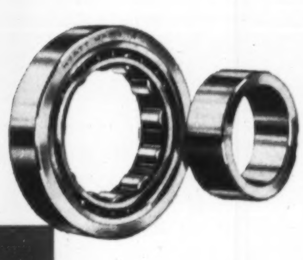


THE BIGGER THEY COME...



the greater the need for HYATT BEARINGS!



Not an atomic tank, but a "king-sized Cat"—used to clear mesquite from Texas ranches. Built by the Peterson Tractor & Equipment Company, of San Leandro, California, the giant tractor pictured above is actually two Caterpillar D-8's joined together—each with the inner track and driving mechanism removed. And in the new final drives—necessary because of increased ground clearance—the builders naturally used Hyatt Roller Bearings, the same precision bearings as those used throughout the standard tractors. As always, Hyatts were specified because they can be counted on to hold maintenance costs to a minimum while reducing friction and wear.

HYATT

ROLLER BEARINGS

STRAIGHT **BARREL** **TAPER**

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

there's more in it for you!

P&H model 655-B
with a
better-than-ever
GOOSENECK BOOM

**get cleaner,
deeper cuts
. . . at no extra cost!**

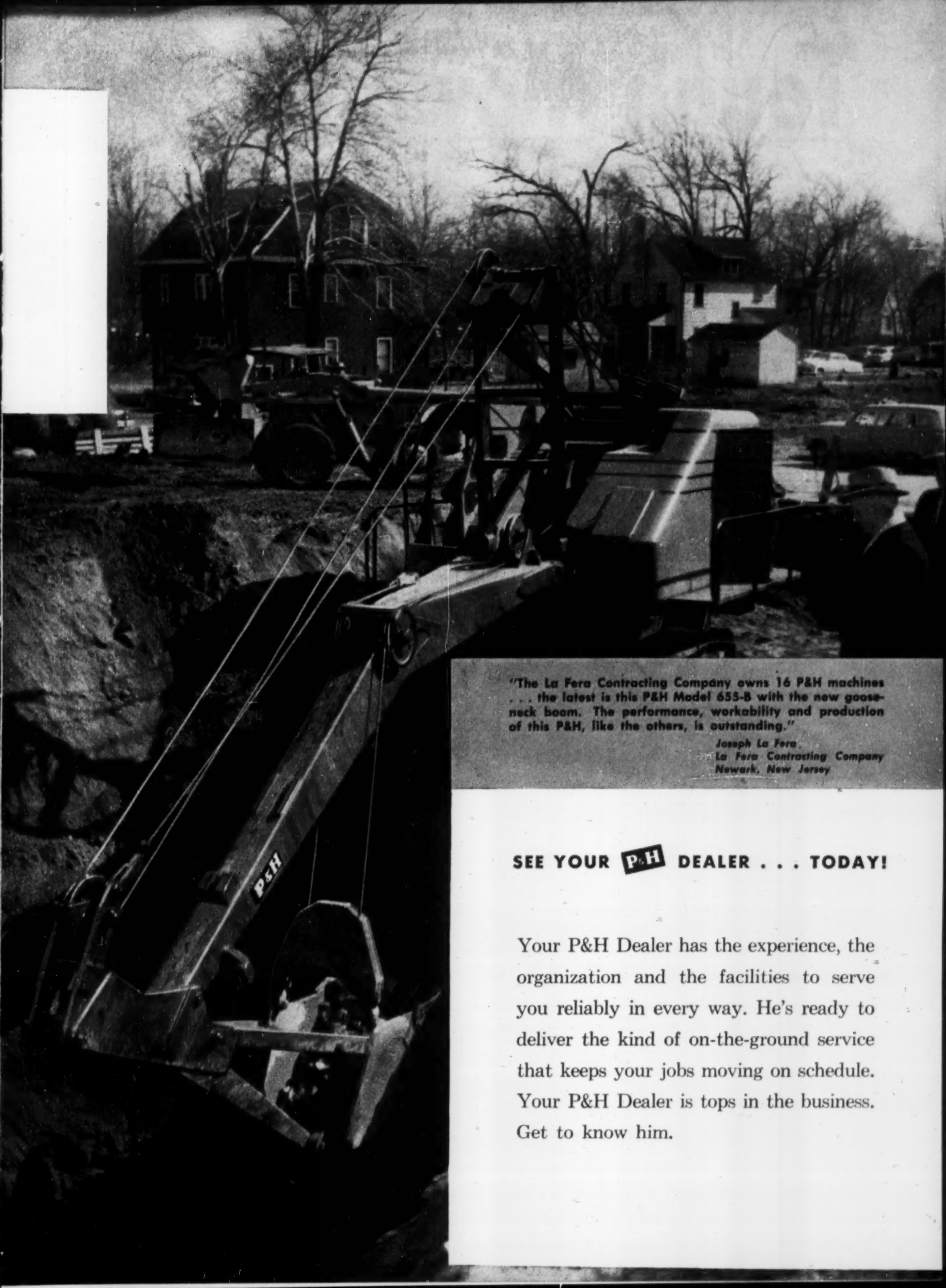
See your P&H Dealer for the big buy in a really modern trench hoe. It's the P&H 1½ cu. yd. 655-B with a brand new gooseneck boom that gives you greater digging depth — greater dumping height — better all-round performance!

You'll make good, clean vertical starts . . . trim walls better . . . and dig as deep as *27 feet.*

The machine behind this new *production* boom is the husky middleweight of the P&H line — a proved performer with those advanced features you want . . . all-welded construction . . . lower center of gravity for greater stability . . . smooth hydraulic control for faster follow-through . . . true tractor-type crawlers. Converts to any service, right on the job.

And the price is right for this great machine. Here's an investment toward greater future profits you won't want to pass up.

P&H POWER SHOVELS AND CRANES
HARNISCHFEGER
CORPORATION
Milwaukee 46, Wisconsin



"The La Fera Contracting Company owns 16 P&H machines . . . the latest is this P&H Model 655-B with the new gooseneck boom. The performance, workability and production of this P&H, like the others, is outstanding."

Joseph La Fera
La Fera Contracting Company
Newark, New Jersey

SEE YOUR P&H DEALER . . . TODAY!

Your P&H Dealer has the experience, the organization and the facilities to serve you reliably in every way. He's ready to deliver the kind of on-the-ground service that keeps your jobs moving on schedule. Your P&H Dealer is tops in the business. Get to know him.

Tough Mowing Goes *Faster...*

Dearborn
EQUIPMENT

with a DEARBORN SIDE MOUNTED MOWER *and the FORD TRACTOR*

For fast, clean mowing in tough conditions, this heavy-duty mower has what it takes! Just move the Ford Tractor's Hydraulic Touch Control lever and you lift or lower the cutter bar from almost vertical to 45 degrees below horizontal position . . . mighty handy for mowing banks, slopes and ditches. You can tilt the cutter bar up to avoid damage in rocky areas . . . tilt it down to get low-lying grass and weeds. For curb mowing, the inner shoe lifts a full 12 inches. And when an obstruction is hit, a positive automatic release cuts the tractor's ignition and the cutter bar swings back.

Yet with all these features, the smooth-running Dearborn Side Mounted Mower is priced exceptionally low. And, best of all, the low cost Ford Tractor that powers it can also save money and manhours on a wide variety of other jobs the year 'round.

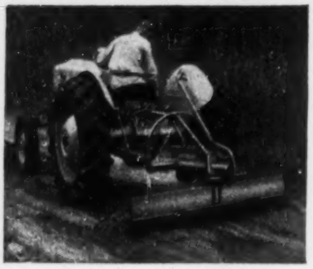
Get proof of Dearborn Side Mounted Mower performance—of Ford Tractor versatility—by asking your nearby Ford Tractor Dealer for a demonstration. Ask him to show you the Dearborn Rear Attached Mower and the new Dearborn Rotary Cutter, too. Do it soon!

TRACTOR AND IMPLEMENT DIVISION
FORD MOTOR COMPANY
Birmingham, Michigan

Ford
TRACTOR

THE FORD TRACTOR KEEPS BUSY *All Year 'Round*

GRADES ▶



The Danuser All Purpose Blade for the Ford Tractor reverses, tilts and offsets to handle grading, backfilling, ditching and many other dirt-moving jobs. You can change its pitch and angle, lift and lower it all from the tractor seat. Quickly attached—controlled hydraulically.

LOADS ▶

Dearborn Industrial Loader lifts and dumps big loads fast—has plenty of "reach" to clear high-bodied trucks. Bucket controlled by 2 hydraulic cylinders. Separate hydraulic pump frees Ford Tractor's Hydraulic System for use with rear-attached tools. Extremely versatile—highly maneuverable!

PLOWS SNOW ▶

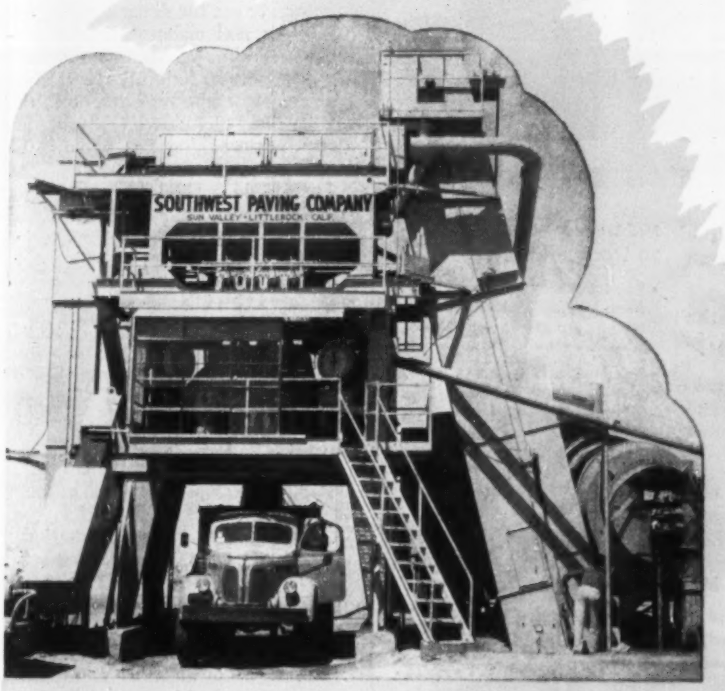
You'll take winter weather, and the snow that goes with it, right in stride with this low priced Dearborn Blade Snow Plow. Six foot blade angles to windrow snow to right or left. Can be attached to universal frame or to Industrial Loader with adapter kit.

WHAT MORE COULD YOU WANT IN AN ASPHALT PLANT?

R. B. Best, President of Southwest Paving Company, Sun Valley, California, has purchased 10 MADSEN Asphalt Paving Plants during the past 33 years! This successful contractor knows what it takes in an asphalt plant to make money on job after job. Here's what he says about his MADSEN Plants:

> *"Our MADSEN Asphalt Plants have always produced top tonnage and our maintenance costs have been extremely low. The service which MADSEN has given us in parts replacement has been outstanding, and all through the years we know of no service delays which have been incurred upon us due to MADSEN not having adequate stock of parts to fill our needs."*

HELPING TO BUILD THE HIGHWAYS OF THE WORLD
MADSEN Since 1910



Throughout the years MADSEN's superior engineering has added many "firsts" in the asphalt paving industry. For example: one-man control of mixing operations, which increases production and reduces labor costs...unit-type plant and the jack-erection system which makes MADSEN plants easier to move and erect...and the MADSEN Asphalt Pressure Injection System (Patent No. 1987243) which assures a more uniform mix and reduces batch mixing time.

Keep this combination of MADSEN advantages in mind when you buy an asphalt plant. They have helped to make MADSEN buyers—repeat buyers... to make MADSEN the West's greatest name in asphalt plants!

◀ *This 4000-lb. batch capacity asphalt plant complete with MADSEN Aggregate Dryer and MADSEN Dust Collector is the 10th MADSEN Plant purchased by Southwest Paving Company.*

MADSEN
Equipment that Serves ®

MADSEN BATCH CAPACITY ASPHALT PLANTS

Let's Clean-up America's Highways
America's highways are beautiful. Don't make them a dumping ground for cans, bottles and rubbish.
MADSEN ASPHALT PLANTS

MADSEN IRON WORKS, INC.
14100 EAST ROSECRANS AVENUE, P. O. BOX 38, LA MIRADA, CALIFORNIA

"Smoothest Surface ever"

—SAYS RAY W. STRAND
of Strand & Sons

ABOUT CONCRETE MADE WITH

MASONITE
CONCRETE FORM
PRESDWOOD

Men's Residence Hall, University of Washington, Seattle
Architect: Young, Richardson, Carleton and Detlie, Seattle
General Contractors: Strand & Sons, Seattle.

"Concrete Form Presdwood gives us the smoothest surface we have ever been able to produce."

Mr. Strand further states that the extreme surface smoothness also saves money by reducing costs of sacking and grinding. He used these all-wood hardboard panels eight times on this job and felt they were good for the four more times needed to finish the structure.

Concrete Form Presdwood® can smooth the way for you—in hours and dollars. Send today for our free booklet. It has the facts!

PUT THESE ADVANTAGES TO WORK FOR YOU!

- Two labor-saving sides to choose from: (a) smooth side for painted surfaces, (b) screen side for concrete of uniform color.
- Low first cost—less than ½ that of other smooth-surface methods.
- Can be curved for arches, columns, etc.
- Uniform and complete hydration assured.
- Large 4' x 8' and 4' x 12' panels handle easily, create fewer fins.

Save Two Ways with Masonite Presdply!

Try Presdply on your next job and get both these money-saving advantages: (1) No backing needed, for Presdply has the structural strength of plywood and the smooth, texture-free surface of Presdwood. (2) Smooth concrete will need minimum rubbing, will quickly be ready for painting. Send for your free sample.

PRESDWOOD
WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN

MASONITE®
CORPORATION Dept. ENR-527, Box 777,
Chicago 90, Ill.

Please send me:
☐ Your booklet on Concrete Form Presdwood.
☐ A sample of Concrete Form Presdwood. ☐ A sample of Masonite Presdply.

Name..
Firm..
Address..
City.. *Zone*..........
County............................ *State*....................

"Masonite" signifies that Masonite Corporation is the source of the product

READER COMMENT

To set record straight

Sir: I should like to call your attention to the news article on p. 21 of the April 29 issue of the Engineering News-Record concerning the lease-purchase plan before Congress now.

Our firm is the architectural engineering firm whose preliminary plans were used by the low bidder, S. H. Pokrass, Milwaukee, Wis., for the new post office terminal annex in Seattle.

The Post Office Department in this instance issued a set of preliminary architectural plans and a fairly complete set of specifications outlining in great detail the department's requirements. The bidders are not required to submit complete work drawings and specifications with their bid. They are supposed to use the department's plans as a basis and elaborate and expand those preliminary plans to show methods of structural framing, fenestration, wall construction, finishes, electrical distribution, methods of lighting, and of heating. It is not intended, in our opinion, that these plans be carried out in greatest detail, but rather to describe a building in such a fashion that it can be evaluated with the other bids.

In the Seattle case, the lease was for a 20-year period and not 25 years; the space requirements were for 381,000 sq ft and not 385,000 sq ft. There were fifteen bids received, of which two were disqualified because they did not have the required bond. The range and annual rental ran from a low of $414,948 to $757,972.25.

You state that one contractor refused to bid because the plans might cost him $10,000. However, you should know that if completed plans and specs were required for the bid, $10,000 is hardly a fee for architectural and engineering services for a $4,000,000 building.

M. W. Deutschman
Watson & Deutschman
Architects and Engineers
Miami, Fla.

[Editor's Note—It is regrettable that the erroneous information on the Seattle project was used in the news report. However, the job was cited merely as an example of design competition that causes some concern among architects, engineers and contractors.

Actually, the example would have served just as well without the incidental (and erroneous) figures on lease period, space requirements, number of bidders and average bid. The illustration would have filled its pur-

(Continued on page 14)

Buildings that make news . . . *(Second of a series)*

Mile High Center, Denver, Colorado

George A. Fuller Company and Webb & Knapp, Inc., Co-developers

Webb & Knapp, Inc., Designers; Kahn & Jacobs and G. Meredith Musick, Associate Architects

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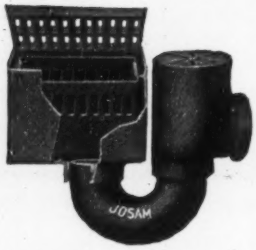
ARENAS • HOUSING • THEATERS • TERMINALS • STORES AND SHOPPING CENTERS • BROADCASTING STUDIOS • MONUMENTAL BUILDINGS

THE BEST DRAIN FOR YOUR NEED IS A JOSAM DRAIN

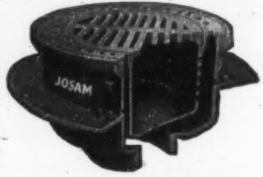
Series No. 410-F Roof Drain with Flooding Water Dam

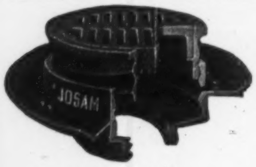

Series No. 6040 Floor Drain with Trap, Sediment Bucket and Floor Cleanout

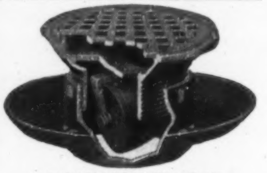
Series No. 0100 Roadway and Bridge Drains

Series No. 6800 Garage Drain for Interception of Oil and Gasoline

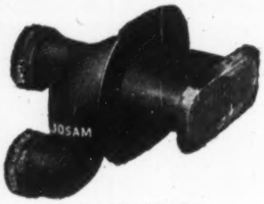
Series No. 4110 Roof Drain with Removable Mushroom Dome


Series No. 5440 Non-Clog Floor Drain with Removable Sediment Bucket


Series No. 3610 Leveleze Floor Drain with Adjustable Top


Series No. 380-J Floor Drain with Adjustable Strainer and Backwater Valve

Also, Interceptors for Grease, Oil, Sediment; Backwater Valves; Swimming Pool Fittings; Water Hammer Shock Absorbers.


Series No. 0700-B Swimming Pool Recirculating Supply

Today, more than ever, the best product of any type to meet your need is the one that handles the condition quickly, dependably, without waste of your time and within cost requirements. In the plumbing drainage field, that product is a Josam Drain. Regardless of the drainage requirement, there is a Josam Drain to meet that need exactly...quickly...dependably.

You don't waste time wondering which drain to use. Josam's 40 years of specialized experience go to work for you selecting the right drain for the purpose—a drain so engineered that it will install faster, perform better, last longer—yet cost you no more than the ordinary drains.

Why take chances when it's to *your* advantage to use Josam? Send coupon for free new Josam Catalog "K"—208 pages of handy information.

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MICHIGAN CITY, INDIANA

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spouting better fruit and bigger profits

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one-man orchard sprayer covers up to 80 acres a day with **CHRYSLER** *high-speed power*

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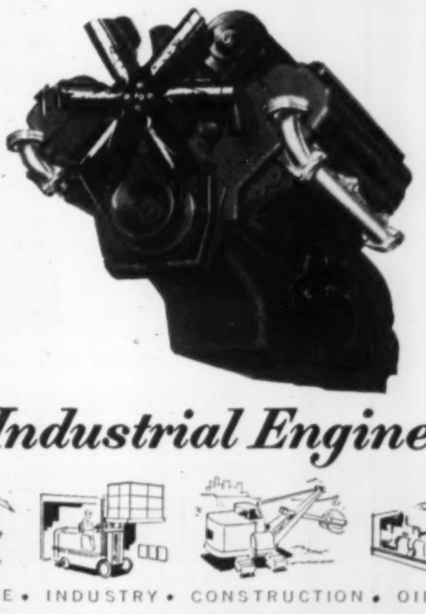

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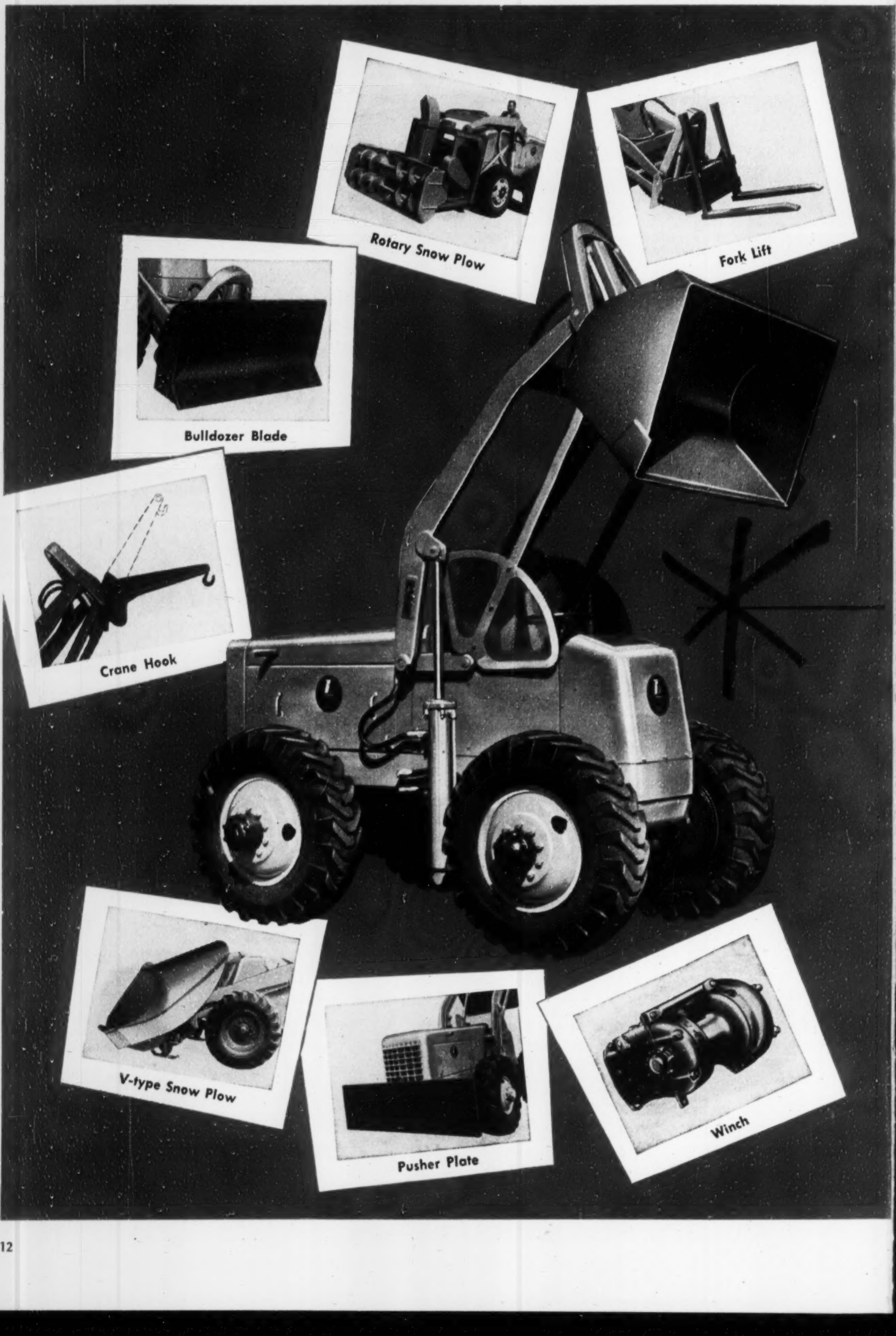
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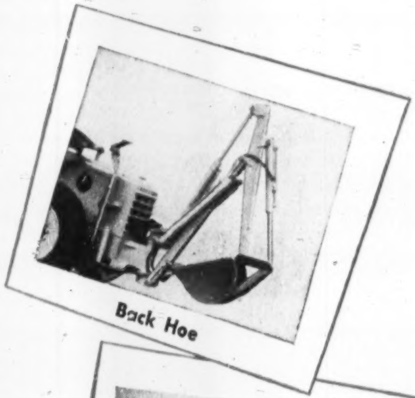

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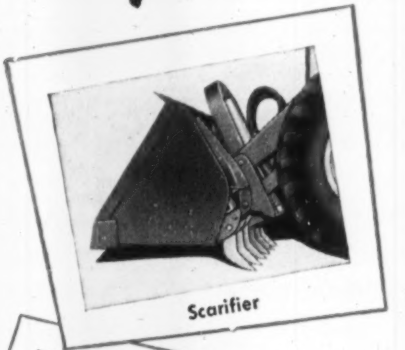

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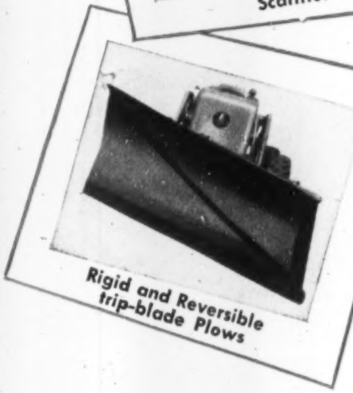

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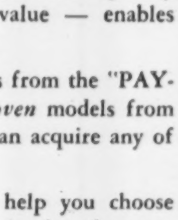

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pose equally well if we had confined our report to an accurate description of the skeleton plans and building requirements supplied by the Post Office Department, on the basis of which the bidders submitted their basic plans for structural framing, fenestration, wall construction, finishes, electrical distribution, lighting and heating.]

Oops!

SIR: In your April 22nd issue on page 17, you correct your figure for the Kirtland Air Force Base job by dropping three ciphers, but in the very next paragraph I think you are guilty of being three ciphers shy. Do you not mean "today's huge billion-a-year home-building industry?"

ARTHUR PYM RHODES
Civil Engineer
Public Works Department
U. S. Naval Training Center
San Diego, Calif.

CALENDAR

California Society of Professional Engineers, convention and trade show, Hotel Mark Hopkins, San Francisco, May 27-29.

Column Research Council, Engineering Societies Building, New York, May 27-28.

National Society of Professional Engineers, Schroeder Hotel, Milwaukee, Wis., June 9-12.

National Association of County Officials, highway exposition, Omaha, Neb., June 9-12.

American Society for Testing Materials, 57th annual meeting, Sherman and Morrison Hotels, Chicago, Ill., June 13-18.

American Society for Engineering Education, University of Illinois, Urbana, June 14-18.

American Society of Civil Engineers convention, Chalfonte-Haddon Hall Hotel, Atlantic City, N. J., June 14-19.

American Institute of Architects convention, Statler Hotel, Boston, Mass., June 15-19.

Conference on Thin Concrete Shells, Massachusetts Institute of Technology, Cambridge, Mass., June 21-23.

Third International Water Supply Congress, London, England, June 20-23 (Secretary General, L. Miller, 34 Park Street, London W 1).

Pan American Congress on Roads, Caracas, Venezuela, July 11-21.

Conference on new developments in engineering design, Virginia Polytechnic Institute, Blacksburg, Va., Aug. 4-6.

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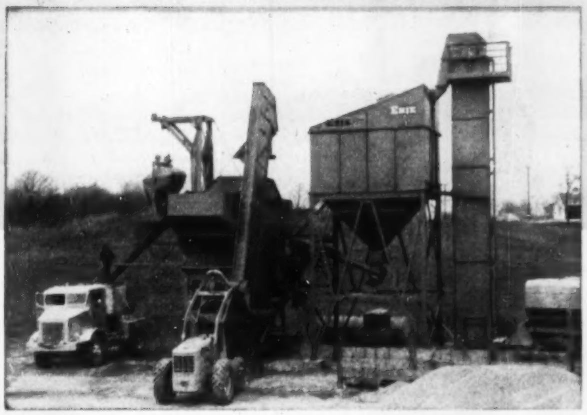

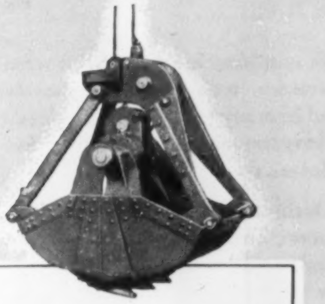

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Fig. 2651-A Gate

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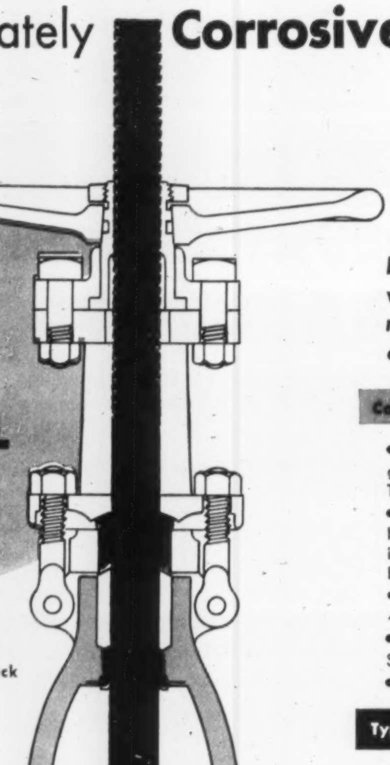
Valves with Type 316
STAINLESS STEEL
Trim

Fig. 2624 Swing Check



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- WEDGE RINGS Rolled into Nickel Iron Wedge in 10" to 24" sizes.
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Vol. 152, No. 21

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THE CONSTRUCTION WEEK

IRRIGATION FROM POWER?—Revenue from public power generated in thermal plants might also be used to subsidize irrigation in the West—thus converting oil shale, lignite, possibly atomic energy into irrigation for crops.

At least that's the idea of the Izaak Walton League, whose representatives urged such a program on a Hoover Commission task force at Denver.

Said the league: Power revenues from multi-purpose hydro projects now go to help irrigation, but hydro sites are limited, and irrigation help from this source, therefore, is also limited.

ANNIVERSARY—The Army's Corps of Engineers marks a major milestone on June 19 at Fort Belvoir, Va.

The Corps will be 179 years old on that date, marking the occasion with a dinner and speeches at Fort Belvoir.

SMOG FIGHTING—The automobile industry stepped into the anti-smog campaigns in a substantial way, with a $50,000 grant to the Southern California Air Pollution Foundation for a long-range study of urban air pollution in urban areas.

Grant came from the Automobile Manufacturers' Assn. of Detroit, which will use its own laboratories and proving grounds to help.

Reason: Auto makers want to find out how much their own products contribute to air pollution.

EXPENSIVE CLEANUP—The City of Troy, N. Y., made a complaint that isn't new at all—but it voiced it loudly anyway—over New York State's plans for cleaning up the polluted Hudson River.

Said Troy: The State Water Pollution Control Board plan for classifying quality and purity of the river water—and enforcing the standards—might cost Troy as much as $10 million for a sewage treatment plant.

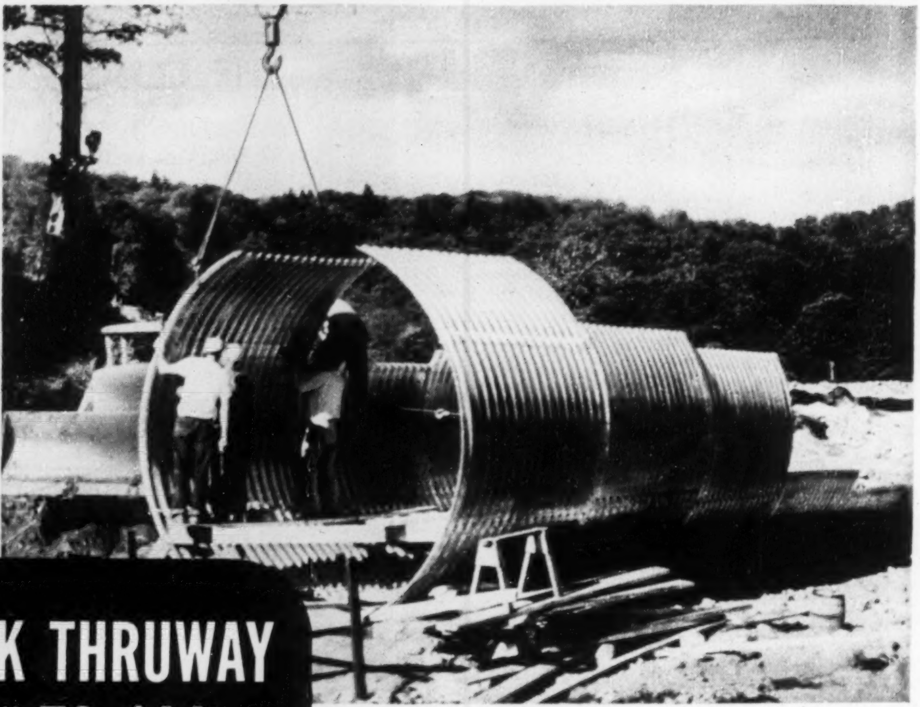
(Troy is the largest city on the stream that now dumps raw sewage into the water.)

The state board, acting under recently approved legislation, can override Trojan objections on the cleanup plan.

MORE AXLE TAX?—Ohio's much-fought-over but legally effective axle-tax on heavy trucks will be adopted by other states, according to S. O. Linzell, state highway director.

The Ohio law levies a tax on a sliding scale from ½ to 2½ cents a mile on all trucks with three or more axles.

It was fought bitterly by truckmen until state courts declared it legal.



. Workmen bolting together 144" diameter Armco MULTI-PLATE Pipe for New York Thruway.

NEW YORK THRUWAY USES 6" TO 144" ARMCO PIPE UNDER PAVEMENT

Assembled 60" diameter Armco MULTI-PLATE Pipe ready for backfilling

By actual count, 27 different sizes of Armco Corrugated Metal Drainage Structures were installed under the pavement of the New York Thruway. These included various sizes of Armco Corrugated Metal Pipe, Pipe-Arch, MULTI-PLATE Pipe, and MULTI-PLATE Pipe-Arch.

All of these metal structures are designed for fast, easy, labor-saving installation. It is a simple matter to join 20-foot sections of standard corrugated metal pipe with bolted coupling bands. MULTI-PLATE structures are assembled by bolting curved and corrugated plates together. Tamping and backfilling completes the job for either structure.

More and more of today's modern turnpikes and expressways are using Armco Metal Drainage Structures. They are strong, durable and can be installed under almost any fill height. For complete information write Armco Drainage & Metal Products, Inc., 3554 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO DRAINAGE STRUCTURES

ARMCO

WASHINGTON OBSERVER

The close vote on the Upper Colorado water project in the House Interior Committee has caused a shift of strategy on the legislation. Backers fear they can't be sure of House passage on the basis of the 13-12 committee approval. So they're holding up taking the $1-billion program to the whole House until they can marshal their forces.

The strategy is to get Senate reaction first. Sen. Eugene Millikin, chairman of the Republican caucus, is the most influential Upper Colorado supporter in the Senate, and the ball is being tossed to him. He's chairman of the Interior subcommittee handling the bill, and is the acknowledged leader of the basin state members.

He will take up the legislation just as soon as he gets the big tax revision bill out of the Senate Finance Committee which he heads. The Administration, by trading Upper Colorado endorsement for votes on the St. Lawrence Seaway, got a lot of support for both. And the tactic now is to present the House with a respectable majority vote of the Senate on Upper Colorado. This way, supporters hope, the House can be convinced.

St. Lawrence Seaway activity is expected to begin soon—once Eisenhower assigns the Army Corps of Engineers to the job, maybe this week. Supreme Court tie-ups should be solved by early June.

•

Self-employed professional engineers will be brought under federal social security under legislation about to go to the House for approval. A main prop of Eisenhower's program, the legislation is fairly certain to get through Congress this session, to take effect Jan. 1, 1955.

Heretofore, engineers who are heads of firms, or working as independent consultants have been exempt. But now they're included among the 10-million additional people coming under the new program. The self-employed will pay a tax of 3% on the first $4,200 of their income.

•

A tax boon for industrial plant modernization is taking form. The Office of Defense Mobilization is studying whether to recommend five-year tax amortization for improving defense facilities, even though new capacity isn't installed.

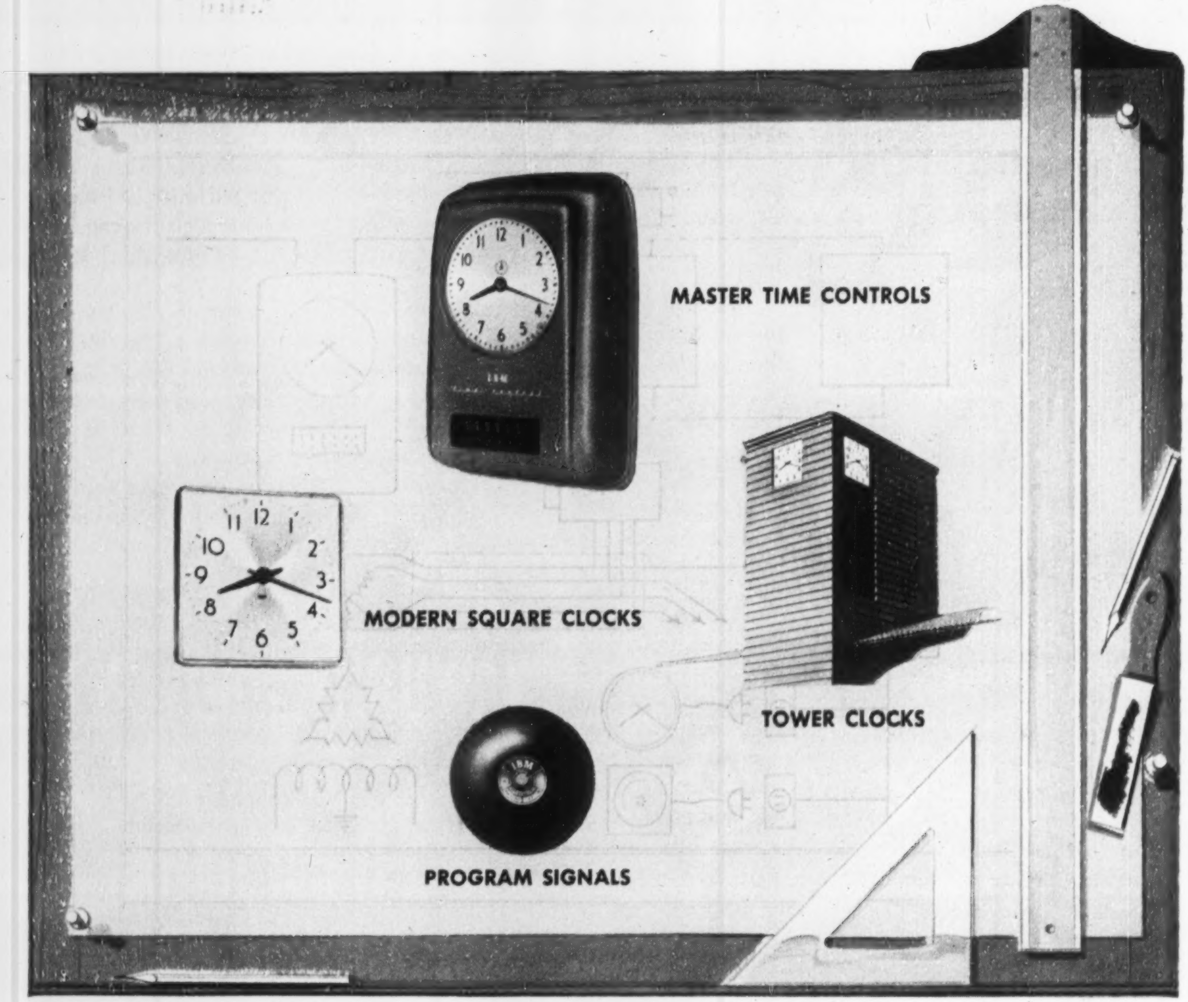
Defense production fast-amortization has been limited to expansion only to date. ODM is considering recommending a change to bolster its policy of maintaining the mobilization base. Defense producers would be able to get fast write-offs for modernization that would improve production efficiency. Helped most would be equipment installation, but construction would get some boost, too.

•

The military is scheduling some auctions that construction men should take a look at. They're sales of surplus equipment. The Army Transportation Corps depot at Marietta, Pa., is selling some cargo handling gear, motor maintenance cars and spare parts on June 1-4. The Navy is selling some construction equipment at Pearl Harbor on June 15, and is selling hardware, plumbing equipment, cranes and trucks at Newport, R. I., the first week in August. Sales also are being planned by the Atomic Energy Commission, but no dates have been set. Last week AEC sold $500 thousand worth of surplus including building materials, metal supplies and hardware at Los Alamos.

•

Interior Undersecretary Ralph A. Tudor will resign when Congress adjourns. He's going back to his own engineering firm in San Francisco. Secretary McKay is scouting for a successor, but no names have come up yet.



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MAY 27, 1954

ENGINEERING
NEWS-RECORD

Congress brightens outlook for fiscal '55 federal jobs

Senate restores some House cuts as construction money bills, new project authorizations are pushed along faster

Congress is hard at work on a batch of construction bills that it aims to move to the White House within the next two months. In spite of the housing furor and the continued accent on economy, the legislators are shaping up a set of measures that should make fiscal '55 a better year for federal work than anticipated.

For one thing, the Senate is restoring a good part of the House cuts in construction appropriation measures. Last week, the Senate passed and sent to conference its version of the Independent Offices Appropriations Bill, increasing House-approved construction funds for the Atomic Energy Commission by $34 million and for the Tennessee Valley Authority by $26 million. The House was expected to accept most of the increase for AEC, but a fight still is going on over the Senate decision to increase TVA appropriation by some $26 million. There is no money involved to start the Fulton steam plant near Memphis; that was voted down by the Senate.

Also, last week, the Senate Appropriations Committee reported an Army civil functions bill that would step up the House-passed funds for fiscal 1955 by $53 million to a total of $484 million, nearly $20 million higher than the Administration budget. The Senate was expected to support the committee recommendation and then reach a compromise with the House after a conference.

The Interior Subcommittee of the Senate Appropriations Committee is preparing the Interior Department money bill for reporting to the full committee. Meanwhile, the counterpart committee in the House was holding the Administration's supplemental request for $1,825,000 to start five new reclamation jobs (ENR April 8, p. 24). This request might have to mark time until Congress acts on a supplemental appropriation measure for fiscal 1955.

Included by the Senate in the money bill for Independent Offices is $150,000 to finance investigation by the Housing and Home Finance Agency of irregularities in the operations of the Federal Housing Administration. The Senate Banking Committee has suspended its own probe of the same disorders to take up the more urgent business of rewriting the 1954 housing bill. (See p. 73 for further details.)

Here is an update of the major issues that affect construction:

- **Civil functions authorizations**—The House Public Works Committee is completing hearings on some $700 million of flood control and navigation projects that are under consideration for this year's omnibus authorization bill. The list of eligible projects has grown by more than 30 jobs since last fall (ENR Oct. 8, p. 71). Because of a jurisdictional dispute between congressional committees, the omnibus bill will not include any authorizations for Department of Agriculture upstream flood control programs.

- **Military construction**—The House Armed Services Committee last week approved $875 million of new authorizations for military and naval public works—plus $400 million of reprogramed Air Force authorization, including $110 million originally requested as new authorizations for the aircraft warning radar net (ENR April 15, p. 23). Included in the bill—scheduled to reach the House this week—is a $73-million authorization for the Arnold Engineering Development Center of the Air Force at Tullahoma, Tenn. The committee is holding over, to put in a separate measure, last week's Defense Department request for a $350-million authorization to build 25,000 units of family housing, mostly overseas (ENR May 20, p. 19). Money for the authorizations will be furnished by a billion-dollar appropriation bill soon to go to Congress.

- **Reclamation projects**—Two big projects proposed for construction by the Reclamation Bureau moved a notch toward authorization last week. The House Interior Committee voted to report favorably the billion-dollar Upper Colorado River Basin project. And the $175-million Fryingpan-Arkansas project was due to receive a favorable vote by the same committee, after approval last week by its Reclamation Subcommittee.

- **Partnership projects**—The House last week passed bills authorizing joint local-federal financing of the $360-million Priest Rapids project on the Columbia River and the $34-million Cougar power development on the south fork of the McKenzie River in Oregon. Legislation to authorize another big partnership project on the Columbia River—a $320-million development at the John Day site—was scheduled for introduction this week in both houses of Congress (ENR May 13, p. 23 and May 20, p. 21).

- **Hospital construction**—The House has passed HR 8149 providing for a three-year, $180-million construction program for diagnostic centers and nursing homes for the chronically ill.

A companion bill now is before the Senate Labor Subcommittee on Health. But there has been no action yet on the bill. A complicating factor in the legislation is the segregation decision by the Supreme Court that some committee members feel might change the approach to providing a formula for distribution of the funds. In most southern states Negro wards are provided in hospitals aided by federal funds. Any new funds for federally aided hospital construction are likely to have to be apportioned to a formula based on the decision.

- **Schools**—The segregation decision has thrown a monkey wrench into the hearings on aid to school construction being conducted by the Senate Labor Subcommittee on Education. Prior to the decision, legislation providing for federal aid to public schools appeared certain of approval.

Some southern senators on the committee already have displayed a hesitation to push the legislation until the full impact of the segregation decision is known. But it is apparent that Southern congressmen won't have much stomach for voting federal aid to integrated schools. Hearings will end this week, but what the committee will do now is up in the air. (See page 25 for report on how the decision is affecting the southern states' own school construction goals.)

It is also likely that apportionment formulas would be upset in federal aid to schools in impacted areas—those areas where there are either large defense or federal activities. Such areas have until June 30 to apply for aid and then Congress will be asked to

. . . Federal job outlook brightens

vote grants for such areas that qualify. The program runs to $144 million over a two-year period for new construction. The office of Education as yet has made no determination whether to withhold funds from school districts that fail to integrate their schools in line with the court decision. Some 2,500 school districts in 48 states are involved, with a heavy concentration in southern states.

Also involved are schools on military installations where segregation has been ordered banned after June 30, 1955, and which local school districts in southern states have refused to operate. Plans were almost complete for federal operation of these schools, when the decision came and now there is the question of whether local areas will be willing to take over their operation.

• **Niagara power**—Chances are fading fast for congressional action on a bill for the development of Niagara power. The Senate Public Works Committee has shut down hearings. Chairman Edward Martin has not scheduled a meeting to enable the committee to vote on four bills now pending—a House-passed bill providing for construction by five New York state private power companies, and three bills that would result in construction by New York State Power Authority.

A poll of the committee indicates a slight edge for a bill by Sen. Francis Case which would call for Congress stepping out of the picture and letting the license to develop the power potential on Niagara River be decided by the Federal Power Commission. The commission tends to favor power developments by public bodies—so the result probably would be licensing the New York State Power Authority.

Chairman Martin is a cosponsor of the private development bill and has been slow to move. If the committee should approve anything but the private bill, that would virtually kill chances of final action this year. The House voted two-to-one in favor of the private bill last year and chairman George Dondero of the Public Works Committee has predicted that the House would not accept a bill calling for development by the New York State Power Authority.

• **Lease-purchase**—House and Senate conferees have not yet been able to arrange a meeting to try to work out differences in the lease-purchase bill as passed by the two branches of Congress (ENR April 29, p. 21). No meeting was scheduled for this week. Despite strong opposition of some congressional and private critics of the legislation, a compromise bill is expected to be enacted at this session, making possible lease-purchase contracts by the General Services Administration and the Post Office Department in the next fiscal year for private construction of some $50 million of buildings for government use.

• **Bid-shopping**—So-called "bid-shopping" legislation, designed to prevent the practice of general contractors shopping for sub-bids on federal works, appears stymied for this session.

The Senate Judiciary Committee approved S. 848 last year. But each time the bill came up on the calendar it was objected to and passed over. So far, Majority Leader Knowland has shown no disposition to schedule the bill for debate, and with Congress moving into the home stretch there is virtually no chance for Senate action.

A companion bill was voted by the House Judiciary Committee this spring but ran into the stone wall of the Rules Committee which has refused to send it to the floor for debate.

N. J. school needs

$178-million program outlined in survey

New Jersey communities will have to spend $178,067,000 on school construction within the next few years just to meet existing needs for new and modern classrooms.

That is the estimate of the State Department of Education which has just completed a survey of conditions in the 1,885 school buildings throughout the Garden State.

In reporting the results of that survey, State Education Commissioner Frederick Raubinger emphasized the estimate covers only needs that already exist. Future needs based on expected population growth will be covered in a later report.

Dr. Raubinger gave this breakdown of required expenditures during the next few years: (1) $164,530,000 to meet the immediate need for 4,000 new classrooms, (2) $7,009,000 for the rehabilitation of old buildings, (3) $6,528,000 for the purchase of new school sites.

The survey, a federal-state project, is part of a national study covering 44 states. The survey staff personally visited every school building in New Jersey. Here are some of their findings:

Of the 4,000 new classrooms which are needed, approximately 1,400 are required to relieve overcrowding of present accommodations, another 800 will be needed to take care of a 40,000-pupil increase this year, and the remaining 1,800 are necessary to replace facilities which are considered obsolete.

Nearly a third of the existing school buildings are combustible in part or in whole, while 5% have no indoor toilets. Two percent have no hand washing facilities and 421 schools have less than an acre of ground.

As of February this year, school districts were using 83 rented quarters, 17 barracks and 344 other makeshift quarters.

Some 24,000 children in 128 schools are on double-session programs because of a shortage of space.

Since most school districts in New Jersey already are complaining that they have about reached the limits of taxaton in order to support the school program, a lot depends on what the state legislature does this year to provide additional state funds for school aid.

Just last week the Republican majority in the legislature agreed to support a compromise bill which would provide an additional $28,500,000 in state aid for local school districts. The money would be raised by boosting the state gasoline tax from three to four cents per gallon, raising the corporate franchise tax from .8 to 2 miles a dollar on net worth, and increasing the state's share of parimutuel betting from 12% to 13%.

Congressional scoreboard

Here is a report on major construction legislation now before Congress. This ENR service, charting the course of these and other measures yet to be introduced, will be published periodically. Status of the bills is traced by the following symbols: H-House of Representatives; S—Senate; i—introduced; c—in committee; r—reported on the floor; p—passed; K—in conference; E—enacted.

Niagara power project	**Hp Sc**
Omnibus rivers & harbors & flood control authorization	**Hc**
Omnibus Housing (FHA, FNMA, public housing, etc.)	**Hp Sc**
Big shopping	**Sr**
Lease-purchase of public bldg	**Hp Sp K**
Upper Colorado Basin development	**Hr**
Santa Maria project	**Sc Hp**
Reclamation projects over $5 million (to be made subject to congressional approval)	**Sc Hp**
Convalescent Hospital Bill	**Hp Sc**
Military construction	**Hr**
Priest Rapids partnership	**Hp**
Cougar partnership	**Hp**

California's Pine Flat Dam dedicated

Pine Flat Dam, on the upper reaches of California's Kings River, was dedicated last week by Maj. Gen. Samuel D. Sturgis, Jr., Chief of Army Engineers. It is the world's eighth highest dam.

Essentially a project to control the torrential seasonal runoff from the mountains back of the rich San Joaquin Valley it will serve, Pine Flat Dam stands 440 ft above streambed, is 1,820 ft long, 340 ft wide at the base, and 32 ft wide at the crest.

Begun seven years ago without power facilities and without an agreement with local water users on repayment for its irrigation features, the project has kept Valley farmers and water users in a tempest for years.

Water users, represented by the Kings River Water Assn., want nothing to do with the Bureau of Reclamation which ordinarily would have jurisdiction over irrigation benefits from the project. Water releases this year are being handled under an interim contract between the Corps of Engineers—which has jurisdiction over flood control operation of the dam—and the bureau, whose touchy 160-acre limitation law on priority water rights is being held in abeyance.

A concrete gravity-type structure, Pine Flat Dam is seated on solid rock on both abutments and foundation. A grout curtain to reduce seepage penetrates the rock for more than 150 ft. Concrete in the dam was placed by the fastest cableway ever devised for this type of construction (ENR Oct. 4, 1951, p. 38).

Three penstocks were built into the dam as part of the ultimate power program.

To control flow there are two tiers of outlet structures with five conduits in each row. Above these on the crest of the dam are six radial gates, each 42 ft long and 38 ft high, to prevent overtopping under extreme flood conditions. Construction of the project was a joint venture of Guy F. Atkinson Co., Charles L. Harney, Inc., both of San Francisco, Bressi & Bevanda Constructors, Inc., Hollywood, A. Teichert & Son, Inc., Sacramento, Calif., and J. A. Jones Construction Co., Charlotte, N. C.

Hydraulic meeting

Plant dedication draws 800 experts to explore pump design trends.

Last week in Kansas City a private manufacturing firm, the Fairbanks-Morse Co., held the first hydraulic conference of its kind in the U. S. Exploring current developments and future needs of improved pump design, the meeting drew 800 engineers, scientists, and business leaders.

Originally the meeting had been planned as an adjunct to dedication of F-M's new foundry and fabricating plant but bloomed into a full-scale industry and research conference. Francis M. Dawson, Dean of the College of Engineering, State University of Iowa, presided at the conference session.

The high point was a symposium—headed by an eight-man panel of hydraulic experts from universities and industry—to discuss developments in centrifugal pumps. Robert T. Knapp, professor of hydraulic engineering, California Institute of Technology, was moderator of the symposium.

• **Larger pump**—Israel A. Winters, Chief of the Hydraulics Machinery Branch, Bureau of Reclamation, led off by citing the need for larger pumps to increase the efficiency of operations in our large river basin developments. Winters defined large pumps—used chiefly in irrigation—as those delivering water at 1,000 to 5,000 CFS and driven by motors of 20,000 to 100,000 HP ratings. He told of one such installation operating at 93.9% efficiency in delivering water at 1,225 CFS against a head of 354 ft.

Deploring the fact that manufacturers are wary of bidding on making larger pumps, Clement P. Lindner, Chief Engineer, South Atlantic Division, Corps of Engineers, called attention to the fact that "regardless of this hesitancy, the demand for larger pumps will continue to grow." Lindner instanced the need for larger pumps on the order of 144-in. to 160-in. dia. for flood control work to develop more land for agricultural use.

• **Deeper wells and higher speeds**—"The trend in deep-well pumps is to continue to set them deeper as ground water tables become lower," said Dan R. Rankin, Chief Engineer, Peerless Pump Division, Food Machinery and Chemical Corp. "Where a 400-ft depth of setting used to be unusual," he said, "we are now approaching installations 1,000 ft. in depth, and this

1,000-ft. setting is not necessarily a limitation."

Pumps with operating speeds four or five times those of our present high-speed pumps will be developed in the future, predicted George F. Wislicenus, Chairman, Mechanical Engineering Department, Johns Hopkins University. The limiting element in this development is perfection of design, Wislicenus said, but once that is solved it is conceivable that, say, a 6-in. impeller will be developed capable of operating at 25,000 rpm against a pressure of 2,000 to 3,000 psi, and driven by a 1,000- to 2,000-hp motor.

• Need for hydraulic engineer—Summing up the symposium, Aladar Hollander, Emeritus Professor of Machine Design and Research Engineer, Hydrodynamic Laboratory, California Institute of Technology, stressed the need for young men in the field of hydraulic engineering and the necessity of greater pump design research.

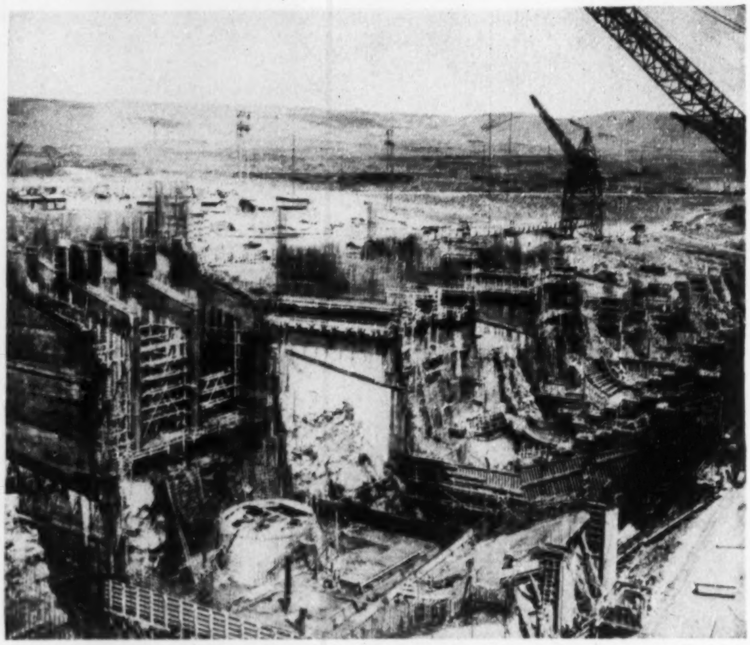
Army Engineers plan end of East Ocean Division

As of next Jan. 1, all functions of the East Ocean Division of the Corps of Engineers will be transferred to the North Atlantic Division in New York. The East Ocean Division, with headquarters in Richmond, Va., was set up in 1951 to carry out defense building in Iceland, Greenland, Canada, Bermuda and the Azores. All of the work is nearing completion.

In preparation for this move, Col. Morton Solomon, now district engineer, Northeast District, at New York, will take over as division engineer, East Ocean Division, to replace Brig. Gen Robert G. Lovett, who retires from the Army June 30. Colonel Solomon was in charge of building the airbase at Thule, Greenland. Col. Sultan Cohen, chief of operations, East Ocean Division, will replace Colonel Solomon.

Thin-shell conference

A three-day conference on thin concrete shell construction will be held at Massachusetts Institute of Technology, Cambridge, beginning June 21. Not only will it cover design and construction of structures that have been built, but in addition it will present original work on warped surfaces and intersecting surfaces. Those attending the conference also will have an opportunity to observe construction on the MIT campus of an auditorium with a tripod dome (ENR May 27, p. 30). Full details may be obtained from Summer Session, Room 7-103, MIT, Cambridge 39, Mass.



THE DALLES DAM POWERHOUSE construction work, progressing behind cofferdam, may be shut down due to rising flood crest on the Columbia River.

Hungry Horse and Grand Coulee will cut high flood crest on Columbia River

Hungry Horse Dam, at the confluence of the Flathead and South Flathead Rivers, and the Grand Coulee Dam on the Columbia are expected to cut a possible record May-June crest on the lower Columbia by 1.5 ft at Portland, Ore., according to estimates by the Columbia Basin Interagency Committee.

The big flood crest was building up in the northeast part of the Columbia Basin last week. High flood water (a 35.3-ft crest equivalent to 1948's record flood crest) broke through dikes along the Kootenai River at Bonners Ferry, Idaho, last Friday as a record mountain snow pack in that corner of the Columbia River Basin reached its peak spring runoff. Some 30,000 acres of rich land in the Kootenai Valley were under water as the river dropped to a 35-ft crest after the break through.

Flood crest in the Portland-Vancouver stretch of the Columbia is forecast for 22.5 to 27.5 ft—the latter crest equal to the one that burst dikes and destroyed the war-built city of Vanport in 1948, the most disastrous flood year in the region's history.

At Portland the Columbia was due to rise over the flood stage of 15 ft this week, but the CBIA Committee anticipates that the 2,980,000 acre ft of storage at Hungry Horse, plus the 1,200,000 acre ft behind Grand Coulee, will prevent a repetition of the 1948 devastation.

• Holding pool levels down—Grand Coulee pool level is being held at 1,274 ft above sea level, lowest possible, but when the river flow reaches 375,000 cfs, outlets will no longer be able to handle the water and filling will begin. Below Grand Coulee, the McNary Dam reservoir will be dropped to rock bottom but this run-of-the-river power project offers only 150,000 acre ft of storage.

Before highwater reaches the Portland area, the river crest is expected to shut down work at The Dalles Dam where spillway and powerhouse work is progressing behind a cofferdam. Flood gates at the project are expected to be opened when the river flow hits 720,000 cfs.

CBIA estimates the Portland peak flow at 910,000 cfs as compared with a 1948 peak of 1,010,000 cfs at The Dalles Dam two weeks after the Vanport disaster.

• Dikes the same as '48—The Corps of Engineers has spent $6.7 million plugging holes and doing rehabilitation work along the 500 mi of diking protection on the Columbia since the 1948 disaster, but nothing else. On May 14 civil defense organizations of the Pacific Northwest conferred with the Corps to update their joint planning to cope with whatever evacuation and relief problems might arise from the coming flood crest.

Segregation ruling won't halt South's school building boom

Some construction will be delayed for re-evaluation of plans but there's still incentive to expedite equalizing facilities

There are no indications that the Supreme Court ruling outlawing segregation will lead to any overall cutback in the multi-million-dollar school construction programs, which 17 southern and border states have undertaken primarily to equalize Negro and white facilities.

Several states will delay contract awards and allocation of funds to local governments pending a re-examinatoin of their plans. But, an ENR survey of the 17 states last week for these reasons showed no disposition to curtail construction:

1. Despite the Supreme Court ruling, a large percentage of schools, particularly in the cities of the deep South, will remain segregated by the mere fact that residential areas in these cities are segregated. Efforts to raise the standard of Negro facilities in these cities are as compelling as before. The major problem of integration will be in the rural areas.
2. There are indications that in states most sensitive on the segregation issue every possible administrative device such as gerrymandering of school districts will be employed in an effort to continue separate facilities—another basis for the desire to push ahead with equalization of facilities.
3. Though equalization has been the prime motive for the school building boom in the South, there can be no question that there has been and still is a tremendous need for new facilities if the region is even to approach national standards. In other words, current and planned construction of Negro facilities is by no means made redundant by the decision. Actually, the Supreme Court ruling—which has focussed attention so dramatically on the South's education problems—may serve as a stimulus to further construction.

Here's how the effects of the historic segregation decision on school construction plans shaped up in the 17 states last week:

• **MISSISSIPPI** – Although contracts will continue to be let on school projects for which funds are available, state officials are in a quandry over how to plan their future construction. After having appropriated $63 million since 1946, the recently adjourned session of the legislature set its sights on a new program geared to the concept of separate but equal facilities. The new program—setting a new code of minimum standards for the entire school system—envisioned expenditures of $80 million for Negro schools and $64 million for white. Realizing that the Supreme Court decision might jeopardize its latest scheme, the legislature created a special advisory committee to deal with the legal points that might be raised. This committee has been summoned to an organization meeting June 2. It will draft recommendations for a special session of the legislature, probably this fall. It is unlikely that much new construction will be undertaken until the legislature acts.

• **LOUISIANA**—Indications are that school construction will be intensified for two reasons: (1) Confidence on the part of state officials that somehow some form of dual school system will be maintained with more funds channeled into Negro facilities; and (2) the continued need for new schools regardless of segregation ruling. Gov. Robert F. Kennon has expressed belief that segregation will be "continued in fact"—a position based on current efforts to provide Negro districts equal facilities. New Orleans has under way a $25-million program—$17 million for 13 Negro schools and $8 million for seven white. School officials are seeking another $25 million to build 17 Negro and seven white schools by 1960. "There is not a single one of these schools which we would have built somewhere else had they been planned after the court ruling," declared De Clarence Scheps, New Orleans School Board president, in reference to the current program. He also stated that future plans would not need to be altered in respect to site locations. "Contrary to popular belief," one spokesman remarked, "we do not have half-empty white schools into which Negro students can move. Nearly all schools are seriously crowded."

• **GEORGIA**—Though Gov. Herman Talmadge's threats of defiance of the Supreme Court decision may result in devious efforts to circumvent the intent of the segregation ruling, the state recognizes the necessity of continuing its multi-million-dollar school construction program. A state school building authority was created in 1951, to expedite school construction. The authority is empowered to issue bonds, build the facilities and lease them to the local governing bodies. It has issued $150 million in bonds thus far. Overall program calls for 1,036 new schools, of which 600 are either completed or under contract.

• **NORTH CAROLINA**—The decision was handed down in the midst of an accelerated school building program. It won't result in any cutback but will delay temporarily the allocation of $100 million in authorized funds. The state administration, which went out of office at the beginning of 1953, had provided $50 million and the 1953 legislature authorized a bond issue of like amount which was later approved by referendum. At the time of the decision, $20 million in bonds had been sold but only $1.5 million allocated to localities. Work for which funds have been allocated from either of the two $50-million funds will continue; but further allocations will be held up until the program can be re-evaluated. According to members of the state school board," the decision doubtless will have considerable bearing on the distribution of funds." A decade of heavy expenditures has brought the state within approximately $36.6 million of equalizing the value of white and Negro public schools.

• **ALABAMA**—Regardless of how it handles its de-segregation, this state faces an overwhelming school construction problem. A federal-state survey completed last year placed need for facilities close to $300 million—$152 million for white schools and $136 million for Negro facilities. At the last Alabama Education Assn. convention, it was conceded that construction should take precedence over rising teachers' salaries, even though the pay scale is far below national standards. A state bond issue of $150 million to $175 million now is under consideration by school authorities and politicians. Actually, the segregation decision appears to be acting as a sort of spur to the drive for stepping up school building expenditures.

• **SOUTH CAROLINA**—Gov. James F. Byrnes last week ordered a temporary suspension of school construction, pending clarification of the legal status of the state's equalization program. The State Education Finance Committee notified every school district to which allotments have been made to halt action on all proposed work for which contracts have not been executed. The commission will meet June 10 to determine whether it can

. . . School building boom despite ruling

continue to make allotments under the state's equalization law or, even if it has the power, whether it should do so without further authority from the legislature. "It is obvious that in locating new schools," declared the governor, "if a building cannot be allocated to Negro students, it might be located on an entirely different site." A $100-million program was launched three years ago primarily to equalize facilities. Of the funds allocated for school construction and remodeling to date, about 65% has gone to Negro schools.

• **VIRGINIA**—Many municipal and county school officials are going to hold back on letting contracts for school construction until they've had a chance to determine whether the size and location of the planned facilities would still be feasible in the light of the segregation ban. In Danville, for example, the decision may affect plans to build a proposed high school for white children on a site a quarter of a mile from a Negro high school, and tentative plans for a new Negro high school or addition to the present one will go on the shelf. The Hampton School Board last week deferred purchase of a 35-acre site for a secondary school.

• **ARKANSAS**—The end of segregation will not change the school construction program. State Education Department says it will cost the taxpayers $17.5 million for new facilities if they want to maintain the level of education now afforded in white schools. Present geographic location of schools by population centers—white and Negro—is expected to preserve the status quo in most areas. Of the state's 1,450 white schools, there are 816 which have no Negroes in the areas they serve. Increasing school-age population and improved attendance will dictate construction needs.

• **FLORIDA**—The state's school construction boom will continue. Under a new method of financing adopted in 1952, revenue from sale of vehicle licenses is pledged to the support of schools. About $47 million is available now for new construction and by the end of the year the figure will be around $80 million. Counties are allowed $400 per instruction unit (one teacher and 30 pupils) by the state and supplement this grant with their own funds. The state has been spending more per capita on school construction for Negroes than for whites, especially in metropolitan areas.

• **OKLAHOMA**—Segregation ruling seriously complicates provision of adequate facilities in Negro areas. White schools are supported by school district levies; Negro facilities by countywide tax levies. School districts—already bonded to the limit in many instances—are ill-prepared to cope with the added expenditures. Solution will be up to state legislature, after U. S. Supreme Court issues final decrees. At least two bond issues for Negro schools, totaling $487,000, last week were expected to be canceled.

• **TENNESSEE**—Both white and Negro schools are crowded as it is, and the state's regular building program will go along without change. School officials are taking the historic decision in stride; they seem optimistic about making the required adjustments.

• **KENTUCKY**—When Sen. Earle Clements declared last week at a congressional hearing on federal aid for school construction, "I cannot possibly see at this moment how this decision could in any way minimize the need for school construction," he undoubtedly had his own state in mind. For Kentucky officials noted that, regardless of the segregation ruling, the state needs to spend $360 million by 1960 on new construction and modernization to raise its school facilities to acceptable national standards.

• **MARYLAND**—Baltimore—with approximately half the state's population—will have no problem in connection with its school construction program. The school attendance pattern is set and new building is to keep pace with population growth. Voters will be asked to approve a $20-million bond issue in November. The counties, on the other hand, will have to re-examine their building programs because they have been planning on the basis of "separate but equal facities" and site changes will be necessary to avoid building redundant facilities.

• **TEXAS**—No drop in school construction is anticipated. Although $460 million has been spent for schools since 1949 and expenditures still are running high, there still is need for new facilities. Houston, for example, is planning a $25-million bond issue. Segregated residential areas in cities make it unlikely that there will be much intermingling of Negro and white students. One question raised is: How many white pupils are likely to switch to private or parochial schools?

• **WEST VIRGINIA**—If transition to complete non-segregation were to be implemented quickly, an acute space problem would arise. But, a gradual change-over can be handled without much difficulty.

• **MISSOURI**—There has been no move to halt construction of schools planned for Negro pupils. Indications are that de-segregation will be carried out calmly and without complicating building plans.

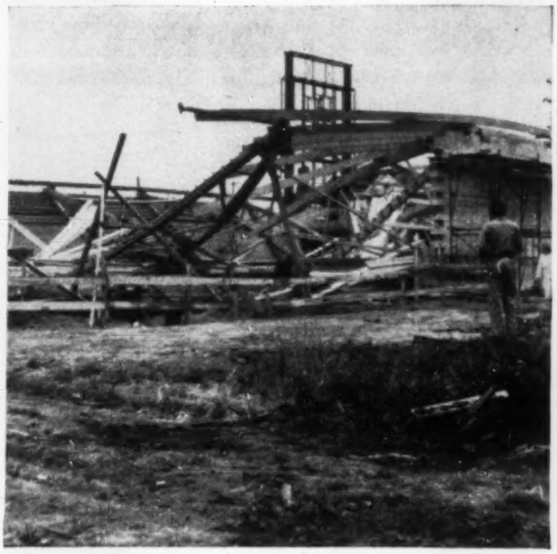
• **DELAWARE**—State officials are not yet prepared to say whether or not building plans will be altered as a result of the decision. The state has spent $50 million on school construction since 1941; has plans for an additional $17 million.

Jobs in the news

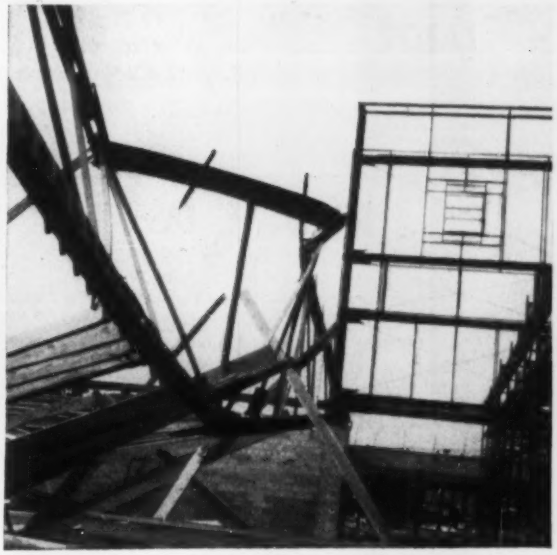
UNDERGROUND FACTORY—A two-acre cavern will be hewn out of limestone in Kansas City to form a 285 by 420-ft manufacturing plant for the Brunson Instrument Co., of that city. Space in the underground plant will be formed by a series of tunnels separated by 15-ft-wide continuous piers of limestone. Tunnels will be joined at their ends by 30-ft-wide transverse tunnels and the whole interior waterproofed, lighted by fluorescent lights and air conditioned. Sale of the crushed limestone may pay for the cost of excavation. The C.-B. Construction Co., will be the excavator and Turnbull-Novak, Inc., are the consulting engineers, both of Kansas City.

DEVELOPMENT—Contract for a $4.5-million medical office building and a $3.5-million apartment house in Washington, D. C., for the Potomac Plaza Development Corp., has been awarded to Hegeman-Harris Co., Inc., New York. The owner also plans a hotel, a second office building and more apartments for the huge project to cost an additional $57 million. Harrison & Abramovitz, are architects, and Chester L. Churchill is consultant architect, both of New York.

ALASKAN SKYSCRAPER—A $4-million contract for the construction of a 14-story apartment at the U. S. Army port of Whittier, Alaska, has been awarded to S. Patti Construction Co. and MacDonald Construction Co., Kansas City, Mo., by the Alaska district engineer, Corps of Engineers. Built for servicemen in the far northern port, the reinforced concrete building will feature "crumble joints" used for large buildings in Alaska as a practical precaution against earth tremors.



TRUSS COLLAPSE in Redwood City, Calif., is blamed on heavy temporary loading of roof joists on top chords and unfinished wall construction. Note temporary shore under end of truss.



TRUSS UPPER CHORD buckled in direction of compression splices in the two 3x14 timbers making up the chord. After top chord failed, the bottom chord gave way too.

Truss failure shows need for bracing

The collapse of seven 105-ft-long wooden roof trusses on a construction job in Redwood City, Calif., earlier this month appears to have yielded a lesson of value to builders.

The segmental arch trusses had been erected by the fabricator, Timber Structures Inc., of California, and turned over to the contractor, M. J. King, Inc. When the accident causing injury to six workers occurred, the contractor's forces were in the process of placing 2x12 roof joists and 2x12 ceiling rafters for the structure, a retail shop being built for Safeway Stores, Inc.

There were indications that a major cause of the collapse could be attributed to heavy piles of roof joists on the unbraced central portions of the top chord of the trusses. A very likely contributing factor was the incompleteness of the wall construction. Neither end wall was completed. Thus, the trusses could not be braced to them. And one truss was supported temporarily on a long post in a wet hole at an incomplete section of a side wall.

The trusses had twelve panels, each 8¾ ft wide. Top chord was made of two 3x14 members joined to make a segmental arch, with compression splices staggered on alternate sides of the chord. The bottom chord was composed of two 3x12 timbers with tension splices. Permanent longitudinal bracing consisted of two lines of 6x6 struts with 2x6 boards as X-bracing. This bracing was located at the third points of the spans in alternate bays. Some 2x12 boards were nailed between top chords as temporary construction braces. Truss spacing was 22 ft 11 in.

One theory of how the accident was caused is that the concentrated temporary roof-joist load got too heavy for the top chord of the trusses, causing them to buckle. Another is that the temporary post under one truss settled, throwing unequal stresses on the trusses, causing a chain reaction of failures. In the latter case, it is assumed that the concentrated load of roof joists contributed substantially to the failure. And it is conjectured that the collapse might not have occurred if the walls had been completed before truss erection.

The most seriously injured workman was standing directly underneath a pile of roof joists. He suffered a broken back. The other workers are expected to recover fully.

N. J. debates its water supply troubles

Despite the threat of serious water shortages in the northern part of the state, the New Jersey legislature is unlikely to take action on bills providing for construction of the proposed Round Valley and Wharton water supply projects (ENR May 20, p. 27).

So many conflicting viewpoints arose at a public hearing held by the legislature's judiciary committee last week that ironing them out by the June 14 summer recess date appeared impossible.

The proposed Round Valley project in Hunterdon County is the most urgent because it would serve north Jersey. This project as envisioned in bills now under consideration would be built in three stages. First step would be construction of a reservoir and conduit lines to take water from the south branch of the Raritan River. Next phase would be building a diversion tunnel to tap the Musconetcong River. And, then would come construction to carry water from the Delaware River to the diversion tunnel.

Chief opposition to the present Round Valley plan is based on fears that it will have ill-effects on the lakes in the region and thus hurt resort business. In an attempt to meet these objections, a compromise plan was offered whereby Round Valley would take all its water from the south branch of the Raritan (about 7 mgd) in the first stage of development and later tap the Delaware River for an additional 100,000,000 mgd, bypassing the Musconetcong River stage.

Among those stressing the seriousness of the water situation in North Jersey were Dr. Thrulow C. Nelson, chairman of the State Division of Water Policy and Supply, and William J. Orchard, veteran leader in the affairs of the American Water Works Assn. and a N. J. resident. Both warned that the state will be "blighted industrially" if the problem is not met promptly.

Comparison: Old and new BLS contract construction series

	Employment in the first quarter of '54 is nearly 5% higher than the old series shows Thousands employed		New series makes big difference in % chg from same month year ago	
1953	New series	Old series	New series	Old series
Jan.	2,382	2,303	+0.7	−1.2
Feb.	2,362	2,282	0.0	+1.9
Mar.	2,388	2,301	+1.4	−0.5
Apr.	2,509	2,416	+1.0	−0.8
May	2,607	2,509	+0.4	−1.3
Jun.	2,711	2,608	+1.5	−3.0
Jul.	2,768	2,662	−1.8	−3.2
Aug.	2,825	2,715	−2.1	−3.4
Sep.	2,866	2,751	−0.1	−1.5
Oct.	2,889	2,772	+2.9	+1.6
Nov.	2,789	2,674	+2.2	+1.0
Dec.	2,632	2,521	+2.1	+1.0
1954				
Jan.	2,349	2,247	−1.4	−2.4
Feb.	2,356	2,248	−0.3	−1.4
Mar.	2,403pX	2,282	+0.6	−0.9
Apr.	2,512pX	...	+0.1	...

p—Preliminary
X—All-time high for the month

Employment up, new yardstick shows

The U. S. Bureau of Labor Statistics has come out with a new series of figures on employment in contract construction, and the picture is much more optimistic than that given by the bureau's former series.

For one thing, the new series shows April employment—climbing seasonally to 2,512,000—to be up 0.1% over April a year ago. What's more, it seems the new figures show construction employment during March to have been 0.6% higher than in March 1953, instead of lower, as the old figures had indicated.

January and February levels were better employment months than previously supposed. The new figures showed them to have been only 1%, not 2%, under the same months last year.

How did BLS do it? Why, the bureau simply changed the basis for estimating total employment to a more recent period. The effect of using a new benchmark is to adjust the old series upward from 1951 through the first quarter of 1954. This doesn't make much difference back as far as 1951 or before, say, but it makes for a substantial increase in total employment tallies during the first quarter of this year, making the total about 100,000 higher than the old series showed.

March employment on nonbuilding construction was 439,000, or 2.6% higher than it was in March 1953. Number of workers on highway and street construction was up nearly 9% to 171,800, based on the revised series.

Carpenters fighting back

The carpenters' union, already heavily in the news (ENR May 20, p. 28 and 30), was becoming involved in top-level and local-level efforts to fight off competition by non-union and other union workers and the effects of unemployment.

At the top, the United Brotherhood of Carpenters and Joiners has set up a department of organization, headed by Frank Champman, a veteran Seattle organizer. Reporting to him is a staff of organizers, varying in number according to need.

At the local level the carpenters were fighting the impact of other unions. In Pennsylvania, for example, delegates representing the state's 26,000 carpenters called their locals to battle against the United Construction Workers, District 50, United Mine Workers, an industrial-type union which, say the carpenters, has been supplying men for Pennsylvania highway projects at pay rates lower than those of the carpenters.

And in Washington the State Council of Carpenters has adopted a resolution calling for a six-hour day and a 30-hour week to relieve the "serious unemployment" it expects will follow the rapid increase in productivity in the nation.

Housemakers capitulate

After a week-long strike (ENR May 20, p. 28), homebuilders in the Greater Cleveland area today retreated from their no-more-money stand and granted AFL building crafts a 12.5-cent hourly wage increase.

A two-year contract between the crafts and the Home Builders' Assn. of Greater Cleveland calls for an immediate increase of 7.5 cents per hour, with another 5-cent raise Nov. 1.

The contract is similar to one signed by the Building Trades Employers' Assn., the week before. Both agreements are retroactive to May 1.

A spokesman for the homebuilders' group said that their contract carries a clause stipulating that the agreement is entirely separate from the one signed earlier between the crafts and the commercial builders. The residential contractors last year had declared themselves independent of the BTEA in wage negotiations.

When is construction like salmon fishing?

Construction in Alaska is a seasonal industry, a district judge has ruled at Juneau in an opinion which may make it impossible for workers to collect unemployment benefits after the regular construction season closes.

An order promulgated June 29 by the Employment Security Commission, has classified the salmon industry as the sole seasonal industry in the territory but the judge held this order was improper in omitting the construction industry.

When an industry is classed as seasonal, its workers cannot draw benefits when they are laid off at the end of the season. They receive payments only when they are unemployed during the same months in which they were employed in the industry in the previous year.

LEXSUCO *Engineered Products for the Construction Industry*

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New Roof Design with Koroseal Retards Fires*

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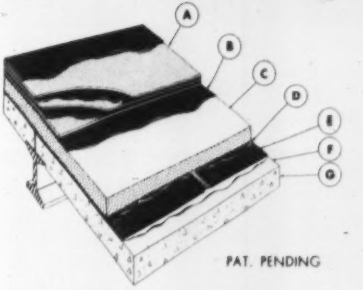
Lexsuco's new design eliminates asphalt and asphalt-saturated felts commonly used in vapor barriers. Instead, the Lexsuco Roof Construction features a special, fire-retarding Koroseal vapor barrier whose superiority has been proved in two full-scale fire tests.

A single thickness of Koroseal film installed over a roof deck with its laps sealed with Lexsuco Adhesive forms an effective vapor barrier . . . and will not contribute burnables to a plant fire underneath. The Koroseal and standard insulation are fastened to any type roof deck with either Lexsuco Insulation Clips or Lexsuco Adhesive. Then a standard built-up roof surface may be applied to form a roof that is waterproof *and fire-retardant.*

Specify the Lexsuco Roof Construction for all new buildings—factories, schools, institutions, shopping centers—it's yours at no extra cost!

If you are planning a new building, send for the complete "Technical Report" on the Lexsuco Roof Construction.

For this or other specific information, write: *Lexsuco, Incorporated, 4817 Lexington Avenue, Cleveland 3, Ohio.*



Lexsuco Roof Construction over Concrete Deck

- Ⓐ Built-up roof surface
- Ⓑ Mopping of bitumen
- Ⓒ Insulation
- Ⓓ LEXSUCO Adhesive
- Ⓔ Koroseal Vapor Barrier
- Ⓕ LEXSUCO Adhesive
- Ⓖ Non-combustible deck

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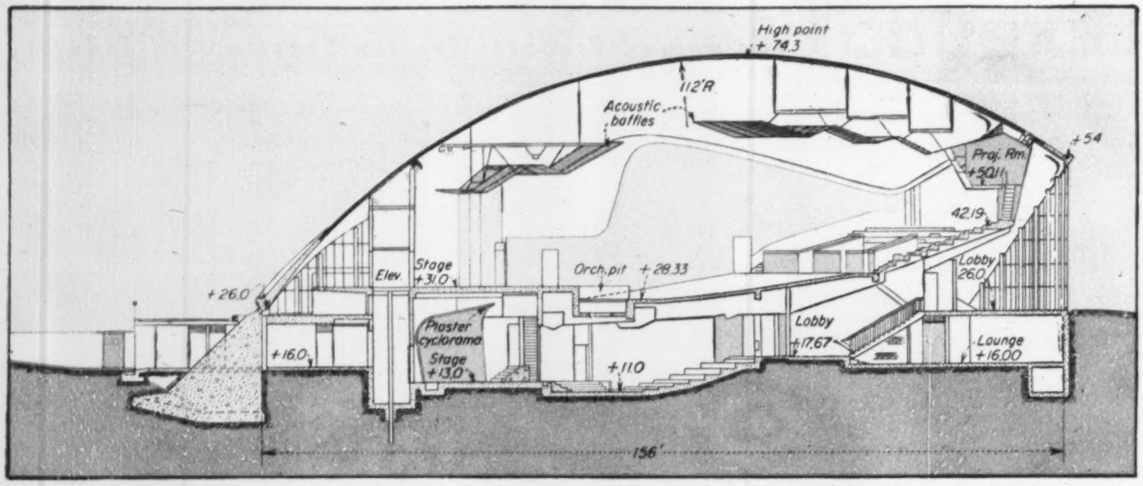


THIN-SHELL DOME supported at three points roofs an auditorium building at Massachusetts Institute of Technology.

Tripod dome built on tricky formwork

A triangular concrete dome straddles an odd-shaped building under construction at Massachusetts Institute of Technology in Cambridge, Mass. The complex geometry—double curvature of shell and curved boundaries—presented the contractor, the George A. Fuller Co., with some unusual formwork problems.

The $1.5-million building contains two auditoriums. One, a 1,200-seat hall, is at grade level. (The dome eliminates the need for columns in this auditorium.) The second, a smaller, 200-seat theater, with a large curved screen at the back of the stage, is in the basement, under the larger auditorium. Glass walls, extending from lobby floor to the edge of the dome, enclose the structure.

• **Thin-shell dome**—The unique roof is actually an equilateral spherical triangle, one-eighth of a sphere. Its three supports, at the vertices of the triangle, are 160 ft apart.

At the center, the dome has a radius of 112 ft, while near the supports the radius is reduced to about 90 ft to gain headroom. Maximum clear height above the auditorium floor is about 45 ft.

Average thickness of the dome, including haunches and edge beams, is 4.8 in. In fact at edges and supports, the shell is only 3½ in. thick.

Atop this shell are 2 in of rigid insulation, a second layer of concrete, 2 in thick, and lead-covered copper roofing. Serving no structural function, the outer concrete layer was provided solely to obtain better acoustical properties and to cut down transmission of outside noise through the roof into the auditorium. The under surface of the structural shell will be painted to serve as a ceiling.

Edge beams along the three edges of the dome superficially resemble arches, but they are not arches in the usual sense. Their purpose is to stiffen and stabilize the shell along the edges. The shell is thickened to 5½ in for a distance of 4 ft near each edge beam, haunches and edge beams extending above the shell so as not to interfere with the smooth surface on the under side.

• **Design loads**—Total dead load for this roof construction is 83 psf. This includes the weight of suspended acoustical baffles. The live load was taken as 30 psf, including wind, giving a total design load of 113 psf. Reactions at the three supports are about 600 tons apiece, with horizontal and vertical components of 425 tons.

The design also took into account a temperature range of plus or minus 30F. Calculations indicated that the shell will be flexible and deformations caused by temperature changes will not induce excessively large forces.

Before starting construction, Fuller in its field office built a model of the roof to give its supervisory men a better understanding of the problems involved. They decided it would be easier to complete the concrete work in the interior of the building before constructing the roof, and work proceeded on this basis.

• **Floor forms simplified**—To simplify formwork for the stepped floor of the lower theater, Douglas Bates, Fuller's superintendent, employed a method that eliminated boxing and cutouts. He used no bottom forms but placed the concrete on the ground. He suspended double-plywood forms for the risers from raised 3x4's which he spaced about 4 to 5 ft apart, fanning out radially from the stage area. For hangers, he used 2x4's.

The radial supports, in turn, Bates placed on threaded ½-in. dia form ties set normally to the sloped ground surface and doweled into concrete pads. The threaded ties permitted him to adjust the formwork to the proper height.

• **Heavy cantilevers**—Structural elements for the upper auditorium appear to be commonplace, overshadowed as they are by the more spectacular dome; but nevertheless they are of some interest from an engineering standpoint. Of these, reinforced concrete rigid frames with long cantilevers supporting the upper part of the auditorium floor are the most obvious. Their design was complicated by the need for supporting at the ends of the cantilevers large concentrated loads from acoustic walls and projector-booth frames. As a result, these members are quite heavy.

The stepped floor is supported on beams that are continuous over a 25 and 33-ft span and project 17 ft beyond the last support. Varying along their length in both width and depth, the beams reach a maximum width and depth of 28 in. and 52 in., respectively, at the cantilever support. Despite this size, reinforcement for negative bending moment still had to be placed in three layers, including the steel extended into the cantilever from a husky column, which shares some of the bending moment.

To maintain a minimum floor-to-floor height, several areas had to be framed with irregular flat slabs without drop panels or capitals and yet with unusually high ratios of span to thickness. In several places, notably in organ and choir lofts and backstage areas, these slabs were designed as long cantilevers.

• **How dome is supported**—While this work proceeded, three reinforced concrete buttresses were constructed to support the dome. They were founded on a bed of sand and gravel that was determined to have adequate capacity to carry both the vertical load and the horizontal thrust. Little extra excavation to reach this stratum was required, because of the depth of the basement. No settlement of buttresses is anticipated, but since the dome is relatively flexible and is supported on spherical bearings, small differential deflections could be tolerated if they should occur.

To distribute dome reactions to the buttress concrete, a pair of heavily stiffened rolled steel sections (10 WF 89) about 7 ft long were incorporated in each buttress. They support at the top a convex-surfaced bearing plate.

Seated on this plate is a steel casting with a concave bearing surface on its lower end. Two steel sections about 10 ft long, fanned out at a 60-deg angle with each other, transmit the roof load into this casting. To encase this steel, the dome shell is thickened gradually near the supports to almost 2 ft.

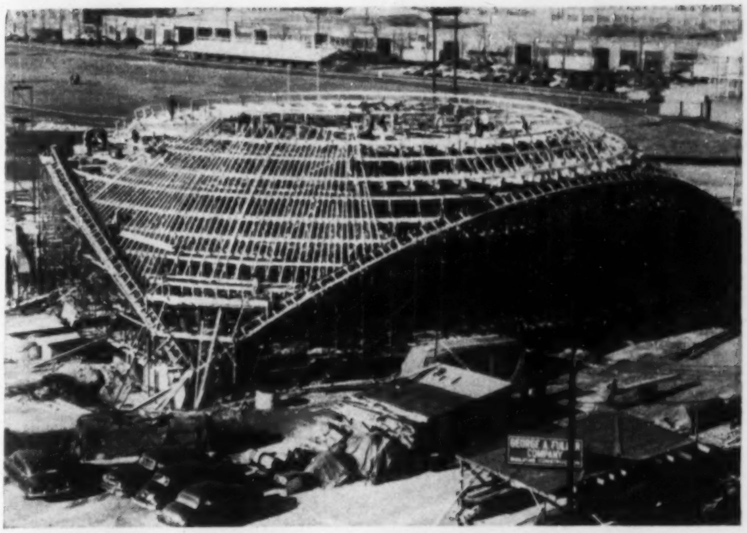
• **Dome falsework**—To ensure that the dome would be correctly shaped, Fuller set up a control point at the center of the building and accurately measured off the coordinates of all key points from there.

The floor of the upper auditorium, adequately shored, was used to support the dome falsework. Pipe scaffolding, to carry the dome form, was erected in rings about 5 ft apart around the control point. Brought up by stages to the same elevation throughout the auditorium, the scaffolding later was stepped up as needed to within a few feet of the future roof, beginning with the outer rings and working toward the center.

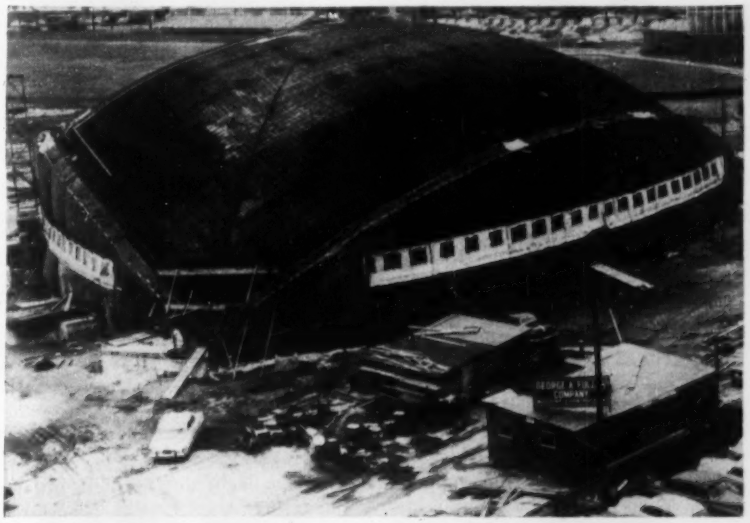
Wood sills made of two 2x10's were placed across the top of the pipe, to support 3x4 wood studs that extended the short distance to the shell form. Wedges under the studs were adjusted so that all the studs in the same ring had the same length.

The studs supported at the top curved laminated wood girders, which were built up by nailing together three 1x7 rough Canadian spruce ledgers.

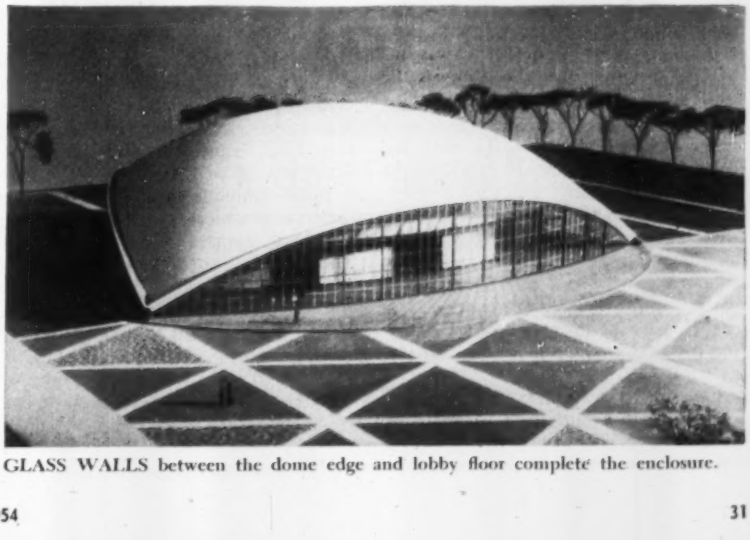
(*Continued on page* 32)



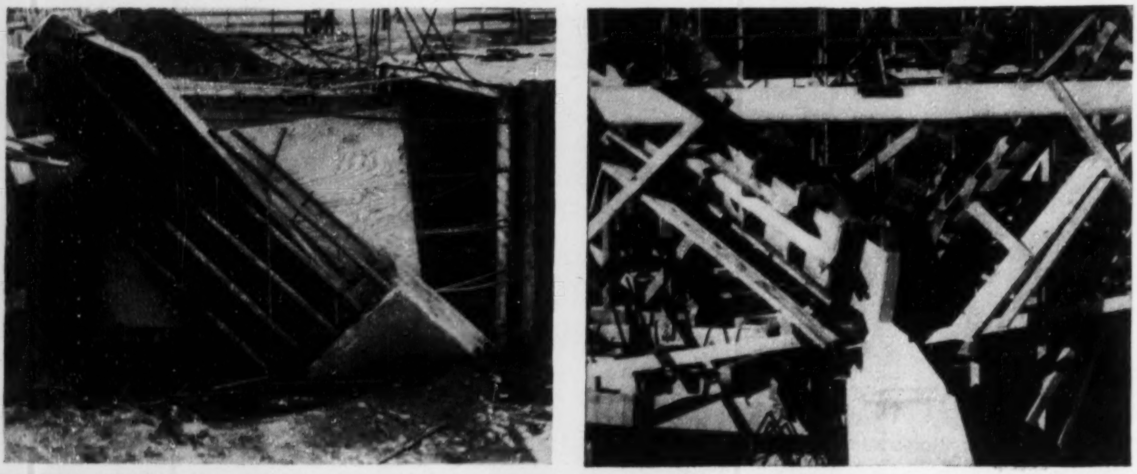
FALSEWORK for the tripod-dome forms consisted of wood joists spanning between wood ring girders, which in turn rested on pipe scaffolding.



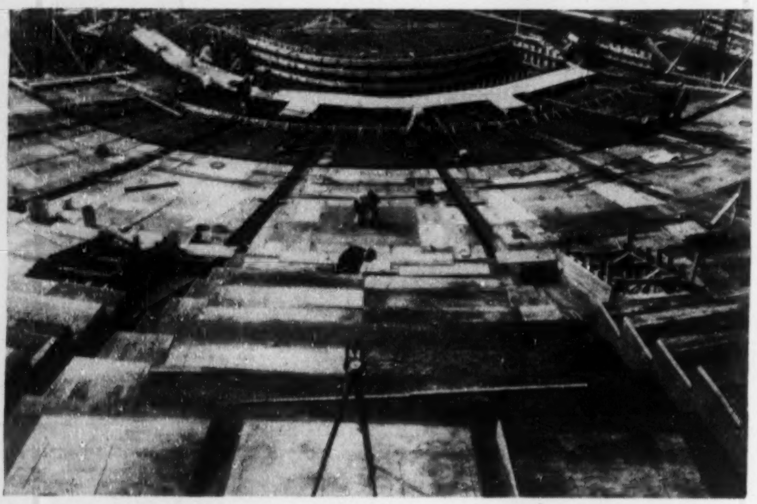
DOME REINFORCING was placed on a form built of matched boards.



GLASS WALLS between the dome edge and lobby floor complete the enclosure.



TYPICAL SUPPORT consists of a pair of stiffened rolled steel sections (left), to be encased in a concrete buttress, and a flared pair of steel sections (right), to be encased in the dome concrete, seated on a spherical bearing.



FLOOR FORMS for the stepped upper-auditorium floor were made of plywood. The slab in the foreground will be supported on 17-ft-long concrete cantilevers.

These ring girders, in turn, supported wood joists, each of which was made up of a pair of 2x4's set normal to the rings and spaced about 18 in. apart.

On top, laid concentrically with the edge beams, were nailed 1x7 Eastern Canadian spruce matched boards, to serve as decking. In general, top forms were not needed but because of the steepness of the shell slope near supports, top forms had to be provided for a height of about 20 ft above the bearings.

Reinforcing for the complete dome shell was installed on the form before any concrete was placed. Laid concentrically with the edge beams, the steel is most heavily concentrated in the vicinity of those members, tapering off as the crown is approached.

• Concreting the dome—All the dome concrete had a minimum 28-day compressive strength of 3,750 psi. Three slumps were used, in accordance with the slope of the shell—5 in. in the double forms, 3½ in. in the flat and 2½ in. in an intermediate section.

The mixes contained 7½ bags of cement per cubic yard for all slumps up to 4 in. For larger slumps, the cement content was increased to maintain the strength as the amount of water increased. Maximum size of aggregate was ¾ in. (The mix with 3½-in. slump was 1:2:2.8 and contained 5 gal of water per cu yd.)

Shell concrete was cast in three sections of about 95 cu yd apiece, in each case starting at a support. In the double-form area, a crane with a ½-cu yd side-loading, lay-down type bucket placed the 5-in. slump mix. When it completed this assignment, it continued to place concrete higher up, assisted by a second crane equipped for the purpose with an 18-cu ft bottom-dump bucket.

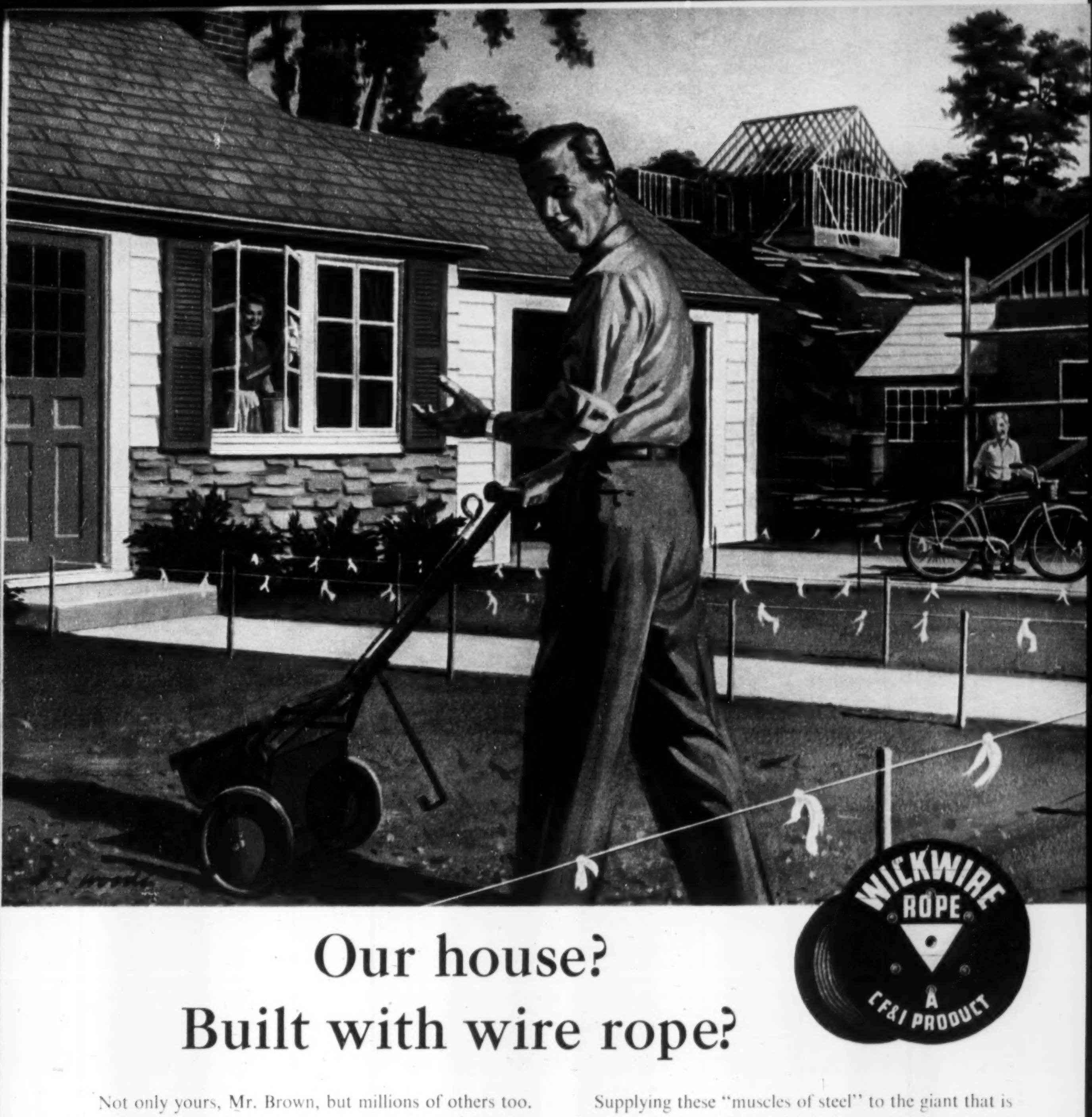
• Winter precautions—Concreting took place during the winter; so measures had to be taken to prevent freezing. Four steam unit heaters with a total capacity of 3,000,000 Btu per hr were installed inside the building, and tarpaulins were attached over plank staging around the perimeter to prevent the heat from escaping.

With this arrangement it was possible to maintain temperatures of 85F to 90F under the dome and 50F to 55F at first-floor level. Fed around the edge beam and over the top of the tarpaulin-covered dome, hot air kept the temperature on top of the concrete about 65F with outside temperature of 35F. When the concrete had attained required strength, as indicated by test cylinders cured under the same conditions as the dome, the forms were stripped.

After that, completion of the enclosure required only placing of insulation, the outer shell and roofing, erection of mullions around the perimeter and installation of the glass.

• Designers and builders—The building was designed by Eero Saarinen & Associates, architects of Bloomfield Hills, Mich., with Anderson & Beckwith, of Boston, Mass., as associate architects. Ammann & Whitney, of New York City, were consulting structural engineers. For the George A. Fuller Co., the work was carried out under the supervision of T. S. Paulsen, vice-president, with W. Douglas Bates as superintendent and Reino Laine, who designed the forms, as construction manager.

For MIT, construction is under the general supervision of Carl M. F. Peterson, superintendent of Buildings and Power, with Richard E. Collins as clerk of the works. Robert M. Kimball, director of the Division of Business Administration, is chairman of the MIT Building Committee.



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1873

WICKWIRE ROPE

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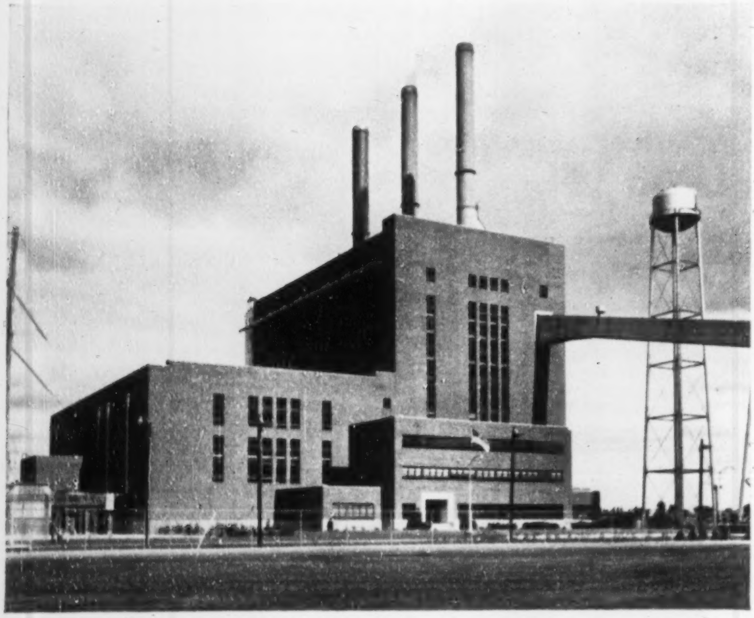
THE COLORADO FUEL AND IRON CORPORATION

. . . College Library in North Carolina
. . . Steam Power Plant on Lake Erie

BOTH WITH SKELETONS OF BETHLEHEM STEEL

This attractive structure, completed recently at Greensboro, is the library building for the Woman's College of the University of North Carolina. The two-story structure has a handsome facing of red and dark-red brick, trimmed with marble and rubbed brick. Its entrance is framed by huge pillars of smooth white Georgian Marble. The steel skeleton consists of Bethlehem Structural Shapes. *Architects and Engineers:* Lashmit, James, Brown & Pollock, Winston-Salem; *General Contractor:* Fowler-Jones Construction Co., Winston-Salem; *Steel Fabricator:* Carolina Steel & Iron Co., Greensboro; *Steel Erector:* Craven Steel Erecting Co., Greensboro.



Building at left is the Justin R. Whiting electric generating plant of Consumers Power Company. The plant, on Lake Erie at Erie, Mich., has a nameplate capacity of 276,000 kw. The ground area of the main building is approximately 70,000 sq ft; the height of the boiler room is about that of a 16-story building. The framework is built of Bethlehem Structural Shapes. *Architect:* Carl C. F. Kressbach, Jackson, Mich.; *Engineers:* Commonwealth Associates, Inc., Jackson; *Steel Fabricator:* Whitehead & Kales Company, Detroit; *Steel Erector:* Herlihy-Mid-Continent Company, Chicago.

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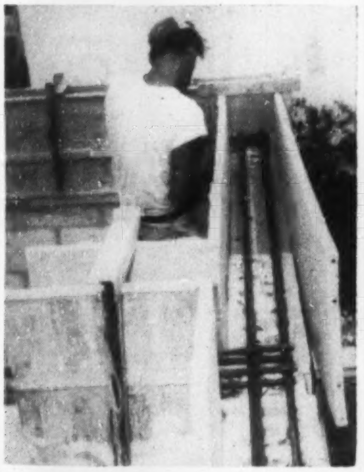
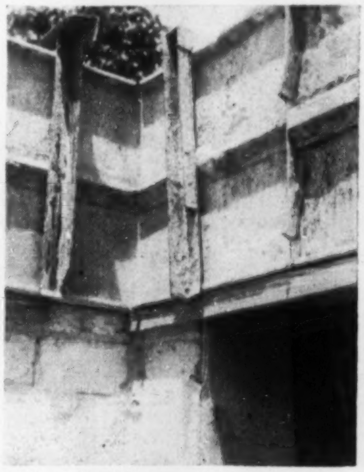


STEEL CLAMPS over and under forms hold them in place and prevent bellying.



GUIDE STRIP supports forms. Flanged ends are tied together by flip-over clamps.

TIE-BEAM FORMING for large Florida motel unit in place and ready for concrete.

Aluminum forms simplify tie-beam construction

For more than a decade builders in southern Florida have been faced with the problem of pouring concrete tie-beams on top of all cement block walls. This hurricane precaution has been required by building codes ever since so many flimsy structures were demolished in the tropical storm of 1926.

Hand placing of concrete in wooden forms was superseded by the use of U-blocks and mobile cranes. In the latter method, U-shaped blocks were set on end as the top row of blocks. This provided a trough which was filled with reinforcing steel and concrete to form the tie-beam.

The major disadvantage of the U-block system is said to be that the blocks are not sufficiently bonded to the wall since only weight and a layer of mortar holds them in place. With this in mind, the Shafer-Miller Construction Co. of Miami developed a set of aluminum forms that they claim eliminate the disadvantage of the U-block method but are faster and more economical than wood forming.

On a typical job, the company first places the reinforcing bars wired in pairs on top of the block wall. Then a 1x2 strip is set, leveled and nailed 6 in. below the top of the wall on both the inner and outer faces. This strip supports the 18-in high forms.

Steel braces over the top of the corner forms hold them in place and steel clamps over flanged ends hold the longer forms. Lengths of the straight forms vary from 2½ to 6 ft, and being made of aluminum, the longest piece weighs only 4 lb. Short splicing pieces are used where needed and are held in an overlapping position by additional braces over the top.

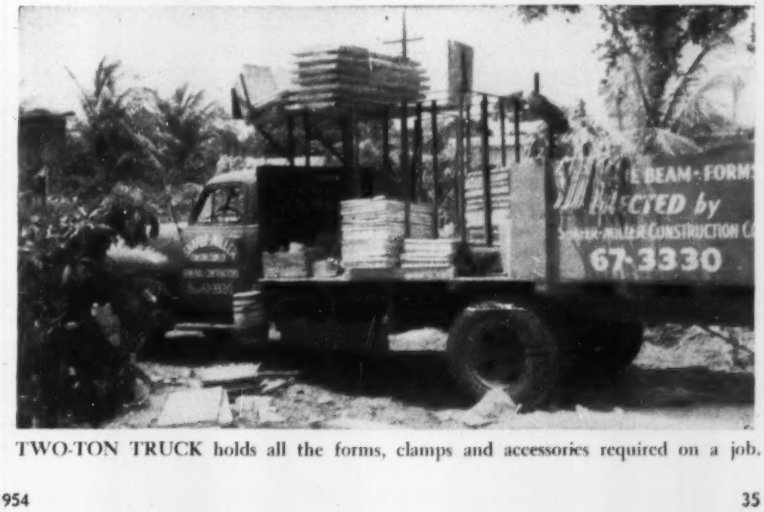
After forming is completed, reinforcing steel supports are swung from the top wire hangers that hold the steel in place during concrete placing. When it is time to remove the forms, the steel braces are lifted and the flange clamps pried open—stripping is reported to be very fast.

Some of the forms employed by Shafer-Miller have been in daily use for more than 2 yrs. with little sign of wear indicated. This durability plus speed of erection and stripping are the chief claims for economy.

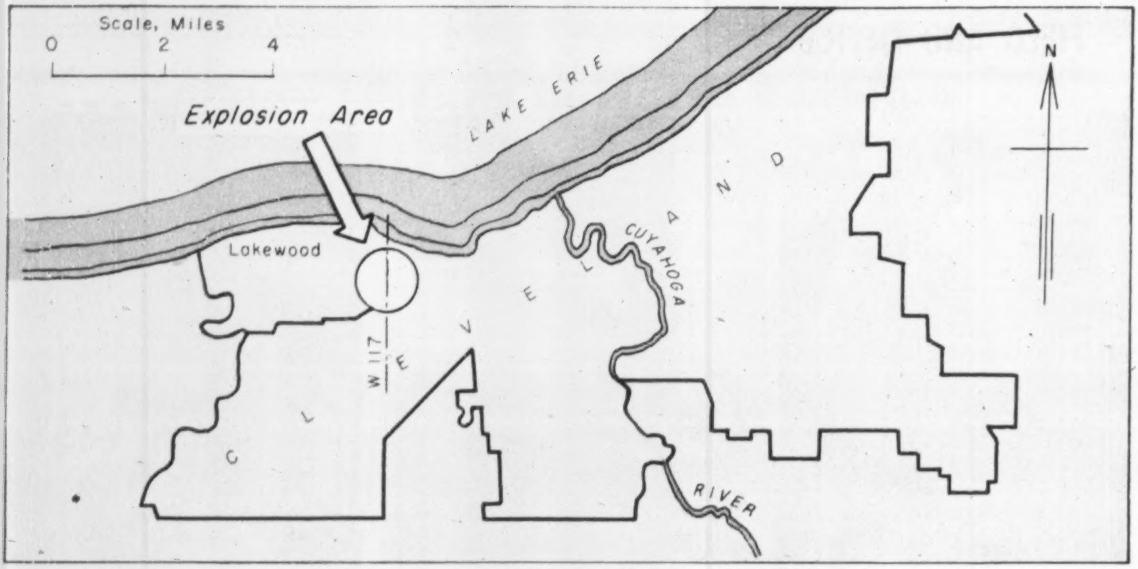
According to the builders, average dwellings having upward of 200 ft. of outside walls can be formed by one carpenter and two helpers in less than a day; on larger jobs with fewer corners and cross walls a crew may do up to 500 ft a day.

Average charges are 45¢ per lineal ft of forming—this includes placing of forms and reinforcing steel and stripping but not concrete placing.

The forms were designed and patented by a member of the Shafer-Miller firm and were formerly used only on company jobs; however, S-M now subcontracts form work from other general contractors and uses about ¼ capacity for their own work and ¾ on other jobs.



TWO-TON TRUCK holds all the forms, clamps and accessories required on a job.



THIS IS THE CITY. Cleveland, Ohio, and adjoining Lakewood, with W. 117 St. the dividing line between.

Case of the exploded sewer

Professors at Case Institute of Technology tackle disastrous "whodunit" with investigative methods new to problem—Findings stress danger of similar explosions

Cleveland's sewer blast—which last September killed one person, injured 64, and caused damages estimated as high as $6 million—has been the subject of a significant six-month investigation, notable for its methods and its findings.

A recently released report (ENR April 8, p 25) describes applications of detection techniques new to sewage and wastes analyses, techniques which uncovered facts emphasizing hazards of industrial wastes quite apart from their pollutional effects.

Prof. George E. Barnes, head of the Department of Civil Engineering & Engineering Mechanics at Case Institute of Technology in Cleveland headed the committee of consultants which investigated the tragic explosion. He is professor of hydraulic and sanitary engineering. His associates in this study were George W. Blum, associate professor of chemical engineering, and Leon W. Weinberger, assistant professor of civil and sanitary engineering—both of Case. Nineteen others worked for the committee in various field and laboratory aspects of the investigations.

The report was made to the coroner of Cuyahoga County and to the mayors of Cleveland and the adjoining city of Lakewood. The exploded sewer (5 to 7 ft in dia) was in W. 117 St., boundary between the two cities.

• Object and scope—The committee's report describes the disaster in such a way as to point out likely causes of its origin and its spread; it draws conclusions based on facts determined; and it recommends safeguards against future catastrophies of this kind.

Investigators looked into seepage of petroleum in underlying native shale, leakage from abandoned gas wells, regularly flowing industrial wastes of a potentially destructive nature, and accidental spillages of flammable or explosive materials into the sewers. They left no stone unturned. Their operations include: photography, aerial mapping, field tests on abandoned wells, some 150 borings for presence of gas and oil, inspection of broken structures, tests for explosives at 300 separate manholes, investigation of fire in the sewer trench some weeks after the explosion, collection of sewage for tests on 350 samples and composites, study of testimony, etc.

This was a thorough investigation.

• Nature of blast—The explosion happened on Sept. 10, 1953, at 5:20 pm. It originated below ground in W. 117 St. and spread out into principal sewers connecting with the W. 117 St. line. This sewer line was destroyed for some 5,500 ft of its length, backfill and paving went up, causing death and injury and major damage to water mains, overpasses, vehicles and buildings. On side streets, manhole covers went flying, as minor blasts in one branch occurred 30 to 80 minutes after the major explosion. The first great shock was felt three-quarters of a mile away from W. 117th St.

The area affected is part of 11,900 acres served by Cleveland's Westerly Sewage Treatment Works. It is a combined sewer system—sanitary plus storm sewage. Investigators studied hydraulics of the system, calculated conditions of flow, and time of flow as related to rates of evaporation for flammables carried by the sewage.

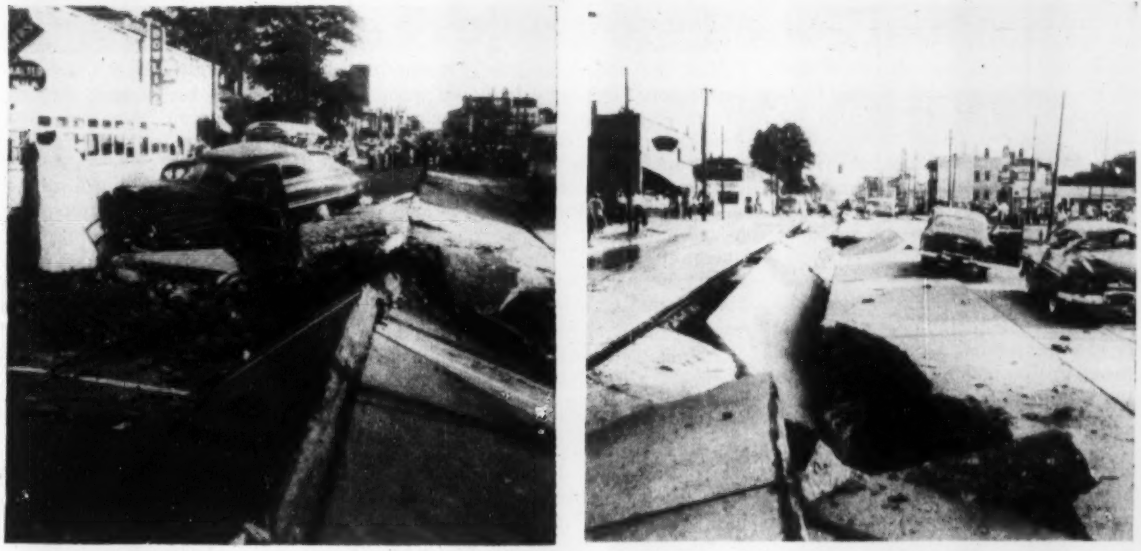
They also checked ventilation and found it none too good. Manholes, the only means of ventilation, were as much as 600 ft apart and many were sealed with dirt and paving materials. (In reconstruction, open grating manholes are being put not more than 250 ft apart.)

• Gas in the ground—Good quality natural gas 600 to 2,900 ft down under this area of Cleveland was a major fuel source back in 1915. Today, hundreds of poorly capped abandoned wells are leaking nuisances in the area; ten are in the immediate vicinity of W. 117 St.

Investigators went to work with explosimeters along sewer lines and around gas wells. Positive readings around several wells from which gas and oil still issue brought immediate fire department actions.

The committee had to race against time for clues that might disappear. Flammables and explosives were sought in sewers and in cellars. But there were no early leads.

• Back to the explosives lab—Lacking immediate leads, the investigating committee went into the general prob-



AT 5:20 P.M. ON SEPT. 10, 1953, 10-in. pavement on W. 117 St. ripped with a terrific explosion. Investigators went to work.

lem of explosives, listed explosive ranges (percent volume in air) and ignition temperatures of more than a dozen common vapors or gases.

They discounted "sewer gas": "Gases in sewers are in general not of sewage origin; they derive from substances . . . put into the sewers along with the rest of the flow." Fatalities from "sewer gas" generally are suffocations in poorly ventilated, oxygen-depleted sewers or manholes, they note.

Tests on gasoline vapors in sewers are cited: "If a sewer should be submerged so as to be unventilated for several days . . . a highly dangerous condition would result if as much as 5 gallons of gasoline or light oil were to escape . . . on its drainage basin." Calculations showed that energy to do the damage of the Sept. 10 blast could come from "vapors resulting from 5 gallons of gasoline (or other volatile hydrocarbon of hazardous character found in wastes) per day for a little over a month."

Conclusion: Volatile flammables in quantities smaller than popularly supposed can do devastating damage in unventilated structures; need for strict control is not commonly appreciated.

• Canvass of neighborhood industry—The committee's quest for information took it to local industries for one-hour to one-day investigative visits. What they saw prompted these general observations: ordinances prohibiting disposal of deleterious substances to sewers are not observed; methods of detecting gasoline tank losses are ineffectual; flammables were found being put knowingly and accidentally into sewers.

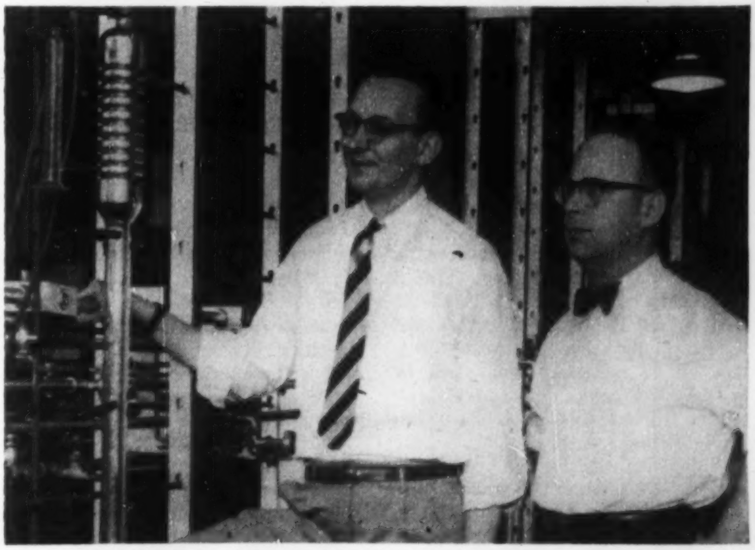
Industrial wastes of hazardous character were sought in sewers. "Standard methods" were not sufficient for this purpose. Laboratory procedures, more familiar to the petroleum industry were used, as ether solubles, paints, combustible vapors and flammables were sought. Ether solubles were found to be in the sewers in greater quantity than commonly known—greater than would be determined from ordinary sewage analysis methods.

Indications from extensive sampling and analysis are that the W 117 St. sewer and its connections carry at least 2 or 3 hundreds of gallons of ether solubles daily—probably a mixture of lubricants, cutting oils, kerosene, naphthas, gasoline, and other solvents.

These could be the cause of an explosion like that of Sept. 10. And they don't exist solely in Cleveland, warns the committee.

(Continued on page 38)

PROFESSOR BARNES headed committee of consultants who investigated blast.



PROFESSORS BLUM AND WEINBERGER were his associates in investigation.

• Could be gases, too—Some 150 borings along W. 117 St. permitted explosimeter checks and also collection of gas samples to send to the U. S. Bureau of Mines in Pittsburgh for analysis with a mass spectroscope. This $40,000 apparatus substantiated interpretations on the explosimeter readings.

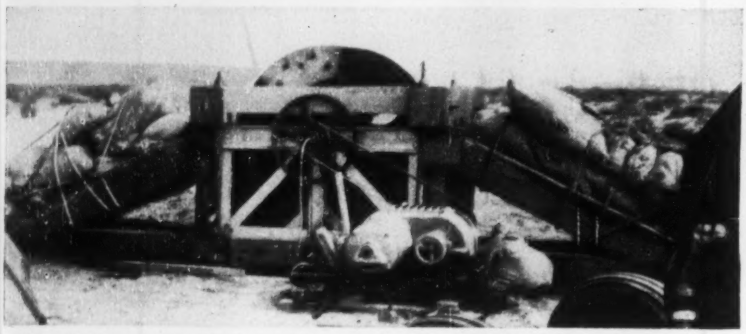
Results were location and repair of two leaky gasoline tanks and two leaking gas wells.

• Findings—"Either industrial wastes, or gasoline leaking into the sewer, or these in combination accounted for the explosion and for the magnitude and spread of the damage."

Sewer gas, natural gas in the ground and gas line leaks were cleared of blame. And no abnormal spill of explosives or flammables could be blamed.

• Results of this case—Exact cause and origin could not be pin-pointed. Eyewitnesses gave conflicting accounts, and the explosion itself destroyed evidence. Some 190 industries or commercial establishments connected with this sewer use some sort of flammables. A dry spell before the blast favored its occurrence; so did lack of ventilation in the sewer.

Here are the committee's recommendations: (1) The cities should seek state funds to correct hazards of abandoned gas fields; (2) a force should test manhole atmospheres routinely; (3) sewage works should have means of testing for flammables; (4) perhaps special tests could be done by private laboratories; (5) all gasoline stations should be made to put down bore holes around their boundaries for easy leakage testing at will; (6) no new industry should be permitted to connect to sewers without sampling facilities, and pretreatment where necessary; (7) existing industries should install gaging and sampling manholes, too, where authorities deem it necessary; (8) a new type of interceptor of deleterious wastes for industrial plants may be in order; (9) contractors who haul away these wastes ought to be checked more closely; and (10) a single city agency ought to have complete responsibility and power in such matters. The report further includes a good discussion of types of ordinance and their workability according to experience in other cities.



TEST SET-UP includes machine with counter-rotating weights that can impose vibratory loading in a variety of directions and intensities.

Vibrations and soil settlement

Shaking machine simulates compression loading in investigation of sandy foundation soil

A large shaking machine tested a sandy formation in Torrance, Calif., recently to determine resistance of the stratum to vibratory loading. This is believed to be one of the largest scale physical tests of its type ever made.

The problem handed to Dames & Moore, soil mechanics engineers, by F. B. Wotiz, civil engineer, representing the Carbide & Carbon Chemicals Co., was this:

Included in one building for a new Carbide & Carbon Chemicals Co. plant is to be a battery of 1,500-hp horizontal reciprocating compressors. Each machine operating at 327 rpm would impose on the foundation a 10,500-lb unbalanced horizontal vibratory force. Underlying formation is old dune sand of at least 50-ft thickness. And sandy strata have been known to settle under such loading. Would settlement occur in this case? And is there any possibility of reaching resonant frequency with its accompanying undesirable results?

The answer to both these questions turned out to be no. Here's how the answers were developed:

Realizing that the usual laboratory and field tests would not give the desired answers, Dames & Moore sought the largest feasible vibration test. They found that the Seismological Field Survey of the U. S. Coast and Geodetic Survey had a large shaking machine. The unit previously had been used for vibration tests of buildings and structures. The engineers arranged a loan of the machine and had two 6½x3x2½-ft foundation pads cast for it. These mats had plugs cast in the four corners, which were referred out to control stakes for both horizontal and vertical movement.

The shaking machine provided a thrust of 5,500 lb at 290 rpm. A maximum frequency of 545 rpm was obtainable but, because of mechanical difficulties, required a reduction in the unbalanced force to 1,800 lb. The weight of the shaking machine and pad was 10,000 lb. This is contrasted with one of the new compressors, which with its 17x11x6¾-ft inertia block will weigh 340,000 lb and have a maximum thrust of 10,500 lb at 327 rpm. Thus, the shaking machine developed a much greater ratio of dynamic to static loading than will be developed by the compressors. So from this standpoint the test was severe.

The shaking machine is driven by a vari-speed 2-hp electric motor. The unit has counter-rotating weights that can be adjusted to give horizontal force only, vertical force only or any combination thereof.

Instrumentation included a tachometer and a vibration meter. The latter, working on the principle of an accelerometer, records vibration amplitude.

Several different tests were run at each of the two sites. Total operating time, where the material was relatively undisturbed, approached two hours. And operating time on an area of sandy fill was 60 min. No settlement was noted at the first site, and only ⅛ in. was measured at the second. So, it was concluded that the big compressors would be able to operate safely without the expectation of damaging settlement.

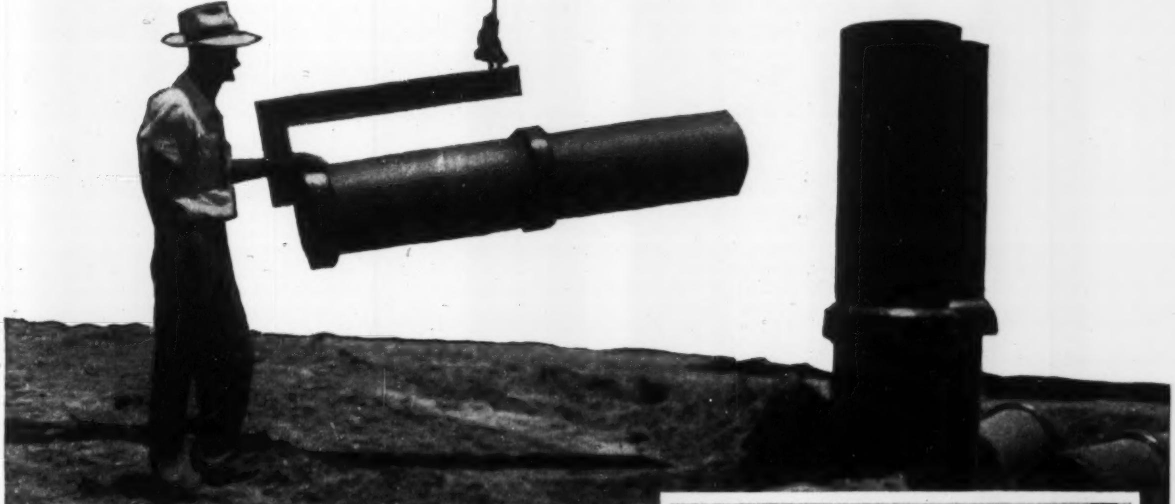
To test for resonance, the shaking machine was brought up to 500 rpm, and the speed gradually reduced. Vibration amplitude lessened continuously as speed was reduced. From this test the engineers concluded that resonance would not develop in the operating range of the compressors.

The work was accomplished by the Los Angeles office of Dames & Moore, L. LeRoy Crandall, resident partner.

Carbide & Carbon Chemicals Co. is designing the plant at its engineering office in South Charleston, W. Va. under the direction of William Katholi as project manager. Quinton Engineers, Inc., of Los Angeles are consultants on the project.

When Sewerage Projects are Bond-Financed...

Look for Vitrified CLAY PIPE



When a municipal sewerage project is financed by bonds that won't mature until 1993, the pipe has to be good. It *must* not fail — especially before the bond issue has been retired. That's why city officials and sewerage contractors all over the country confidently specify, buy, and install Vitrified Clay Pipe. They know Clay Pipe is the *only* pipe . . .

- **Completely unaffected by sewage acids and corrosive industrial wastes . . .**
- **Sure to last regardless of the fluids that may flow through it in the future . . .**
- **Guaranteed for 50 years!**

The $27 million bond issue launched by the city of Miami will cover long-needed sewerage improvements that will require hundreds of thousands of feet of Vitrified Clay Pipe. In the 79th St. installation shown here—a small part of the overall project—some 12,000 feet of Clay Pipe were installed. City of Miami officials who directed various phases of this project are: Engineer Arthur E. Darlow, Inspector Frank Allen, and Supervisor of Sewer Design W. B. Lewis. Under the direction of General Contractor Joe Reinertson, Inc., were Design Engineer W. T. Eefting, Job Superintendent Tom Bryson, and Superintendent of Construction Inspection Fred Righter.

Vitrified CLAY PIPE

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C-154-1

(Advertisement)

Pictures of the month . . . *by LeTourneau-Westinghouse*

219 tons overburden hourly — Hauling clay, gravel, and sand overburden from a silica pit in Wedron, Illinois, each of these LeTourneau-Westinghouse Rear-Dumps completes seven 3600′ cycles per 50-minute hour. Despite 400 ft of 6 to 10% grades leading out of pit and 150 lbs rolling resistance on haul, the 3 units deliver combined total of 162 pay yds (219 tons) hourly. Says A. O. Anderson, foreman for Wedron Silica Co, Chicago, owners of the equipment, "These Rear-Dumps are easy on upkeep. Lubricating takes less than 10 minutes a day." Says Operator Oliver Brooks, "They're easy to handle. Brakes are fine, too."

Economical on 700 ft push — Replacing 2 crawler-tractors for Marietta Concrete Corp, Ohio, Tournatractor pushes sand and gravel 50 to 700 ft to dragline for loading. Dozing at 3½ to 8 mph, Tournatractor easily equals output of both the big crawlers which could work only at 1 to 2 mph.

Learn to operate in ½ day — In East Pakistan, a crew of unskilled laborers was hired to run 10 electric-control D Tournapulls for a 3,000 acre leveling job. After a few hours instruction and practice on these machines, they had learned operation sufficiently to be put to work. In fact, operators had grown so competent on fingertip controls, the 10 Tournapulls hauled and dozed all 1,332,000 cu yds involved "well ahead of schedule."

5 times the yardage — S. A. Cummings, Compton, Calif, reports 2 C Tournapulls hauled 21 loads (210 pay yds) of clay and silt hourly on 2800 ft cycles to terrace housing sites in Inglewood. "C's" moved 91% of yardage in 27 days . . . 30,480 yds each . . . compared to 6,040 yds for a crawler and 18-yd scraper.

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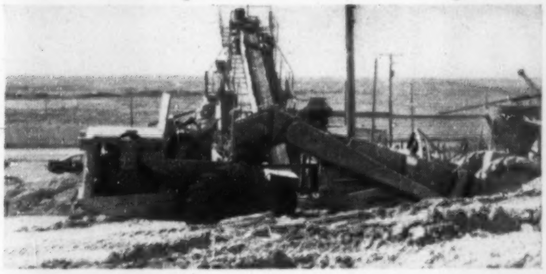
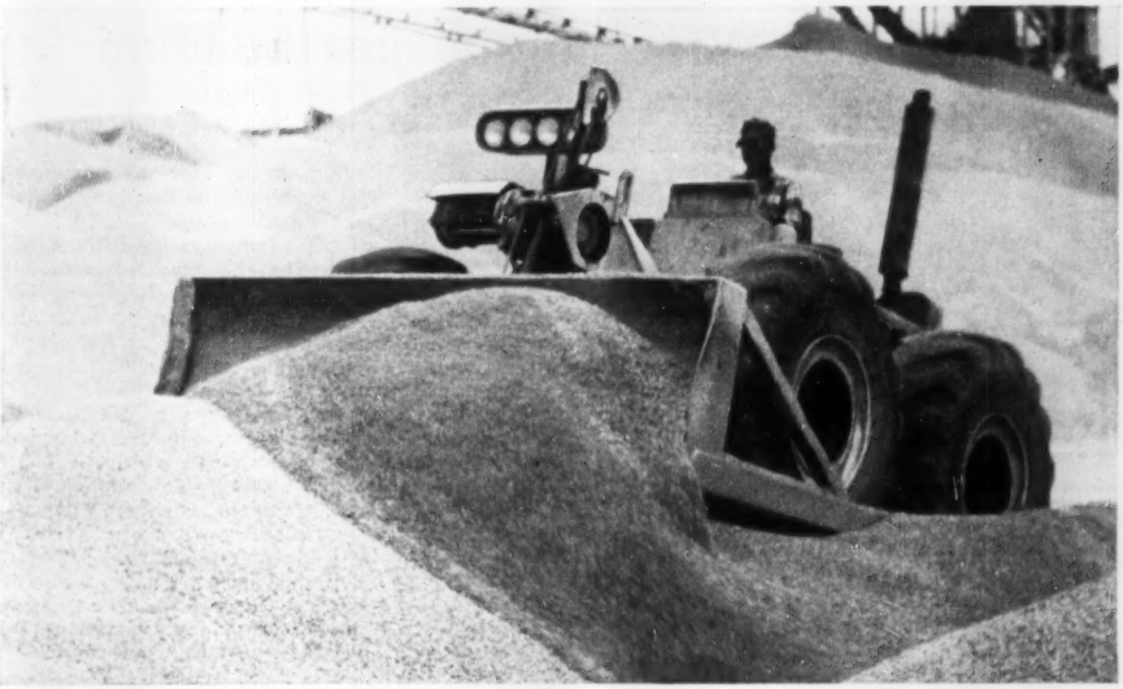
. . . *with performance reports from around the world*



1 does work of 4 — "My one D Tournapull has replaced 3 trucks and a ¾-yard shovel on this job, and eliminated wages of 3 hired men," says Sam Coffman of the Bowie Sand and Gravel Co, Bowie, Texas. His 7-yd "D" strips the pit . . . selectively self-loads sand and gravel . . . stockpiles material.

Wheeled "race horse" — Like the horses which will run here at Vernon, N.Y., a 35 mph C Tournapull churns up clouds of dust on this 300,000-yd leveling job. "C" helped D. W. Winkelman Inc, Syracuse, level 240 acres for a ¾-mile track, 1500-car parking lot, and 4500-capacity grandstand.

11 months, 1,137,500 yds of dirt — In 11 months, 7 LeTourneau-Westinghouse Rear-Dumps (foreground above) and 12 LeTourneau-Westinghouse Bottom-Dumps moved 1,137,500 cu yds of river-bottom sand and gravel for the Inn River power project in Austria. Hauls varied from 1600 ft to 3 miles, one-way. When completed, this will be one of the largest hydro-electric plants in Europe. Over 5,100,000 yds of dirt will be needed for the 32,750 ft of levees which will line the reservoir. The main dam will be 920 ft long and 790 ft high — 60 ft higher than Hoover Dam in the U.S. It will provide 513,000,000 kw hours of energy yearly.



Tires outlast tracks, 4 to 1 — Because tracks on their crawler had to be replaced every 650 to 900 hrs, Miami Crushed Stone Co, Florida, bought this Tournatractor for stockpiling, other odd jobs. In 9 months, Tournatractor worked 3800 hrs — still had original tires. In 12 months, their crawler worked only 2600 hrs. Crawler lost hours for track repair; was often idle because it could not economically handle scattered jobs. Frequently, Tournatractor could get to job, do work, and return before crawler could travel ¼ mi. Tournatractor also boosted production . . . pushing sand 150 ft, it delivered 2 loads to crawler's 1. For more information on Tournatractor or other tools, write LeTourneau-Westinghouse Company, Peoria, Ill.

Tournapull—Trademark Reg. U.S. Pat. Off. Tournatractor—Trademark Pic-665-G

HAND PICKING'S SLOW WORK—but open spaces like this are created by a good crew armed with wrecking bars and shovels.

DOWN THE HATCH, to trucks.

Wrecking—it's just building . .

The larger and older the city, the more critical is the problem of creating the space for needed transportation, office, shopping and public facilities.

Almost every structure planned for a business district location requires clearing a site. Demolition, therefore, represents one of the most essential operations in rescuing the city from static antiquity.

Construction in 1950 of the $24-million Port of New York Authority Bus Terminal in mid-town New York City required relocation of 600 families and evacuation of 164 commercial tenants, despite critical housing shortages in the city at that time.

To prepare for the eastern approaches to the third tube of the Lincoln tunnel, the PNYA is now in the midst of a program involving 90 structures. Fifty-two of the buildings are tenements, 21 are loft buildings and the remaining 17 are commercial establishments.

This project necessitates relocating 800 families in the area. The authority deals directly with each tenant, where possible, and payment—not in excess of $200—is made to the tenant. Where a real estate broker is involved, the tenant receives payment not to exceed $100.

Demolition in the area is costing the authority $500,000. Low bidder for the work was the George A. Cosman Wrecking Co., of Jersey City, N. J. The PNYA is represented by authority engineers Joseph Gavin and George Husing.

All buildings were occupied, and it was impossible, economically, to schedule demolitions in advance. Therefore, Cosman is being paid a fee over and above the contract figure in an effort to compensate the contractor for cost and inconvenience encountered in extensive leap-frogging and backtracking that is necessary as the buildings are emptied.

Now, all but ten families have been relocated, and the scheduling of demolition jobs will be possible during the balance of the razing program.

• Not size but type—The size of the doomed building has no direct relationship to the cost of wrecking it. A reinforced concrete building of low cubic content and low salvage value obviously hasn't the same appeal for

TOUGH PROBLEM of any wrecking job is the reinforced concrete building. Burner and hammer do full duty after hand trimming.

. . . In Reverse

bidders as a large building with unusally high salvage value.

• **The wrecker**—It is the demolition contractor, then, who carries the ball at the kickoff of most metropolitan building programs. He is strictly big business and knows his construction—if he didn't, he'd go bankrupt on a toboggan.

The wrecker's reputation for making a killing with every job is largely mythical. His margin of profit is dependent upon three delicately balanced variables.

(1) An accurate estimate of the labor necessary to raze the structure.

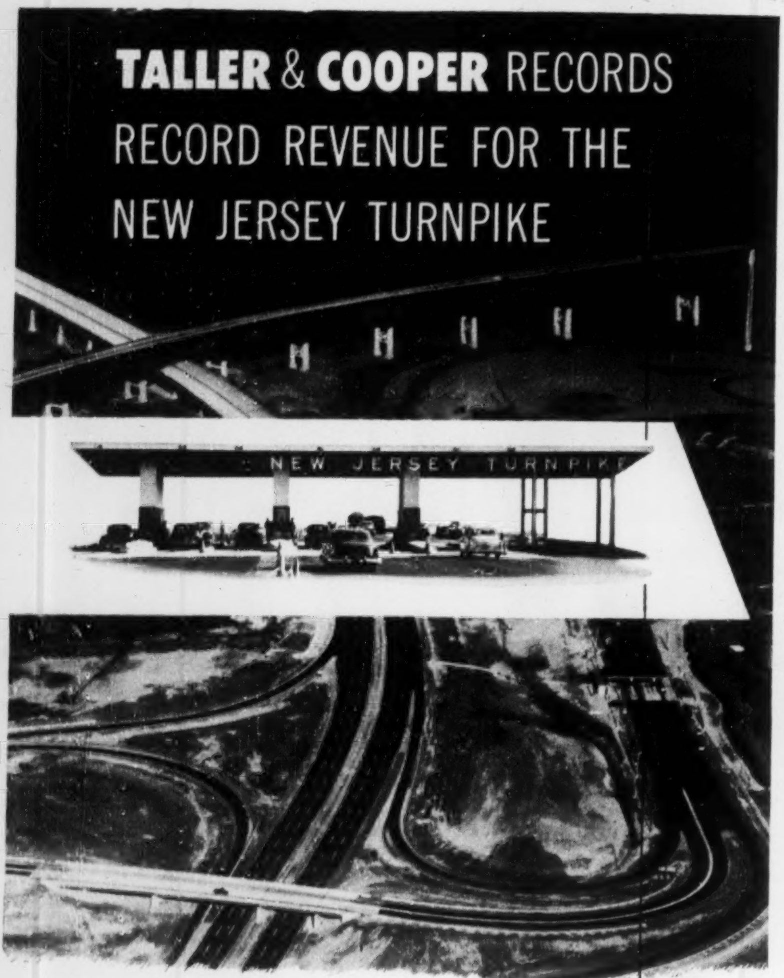
(2) Evaluation of available salvage material in any building that can mean the difference between handsome profit and dismal loss.

(3) The fluctuation of an extremely touchy used material market, an ever-present threat to the profit to be derived from a wrecking job. This is especially so on the occasions when several weeks elapse between the time of estimate and the start of the demolition operation.

True, the wrecker has more chance

(Continued on page 44)

BALANCING SALVAGE AGAINST LABOR—key to successful wrecking operations.



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ENR staff photos

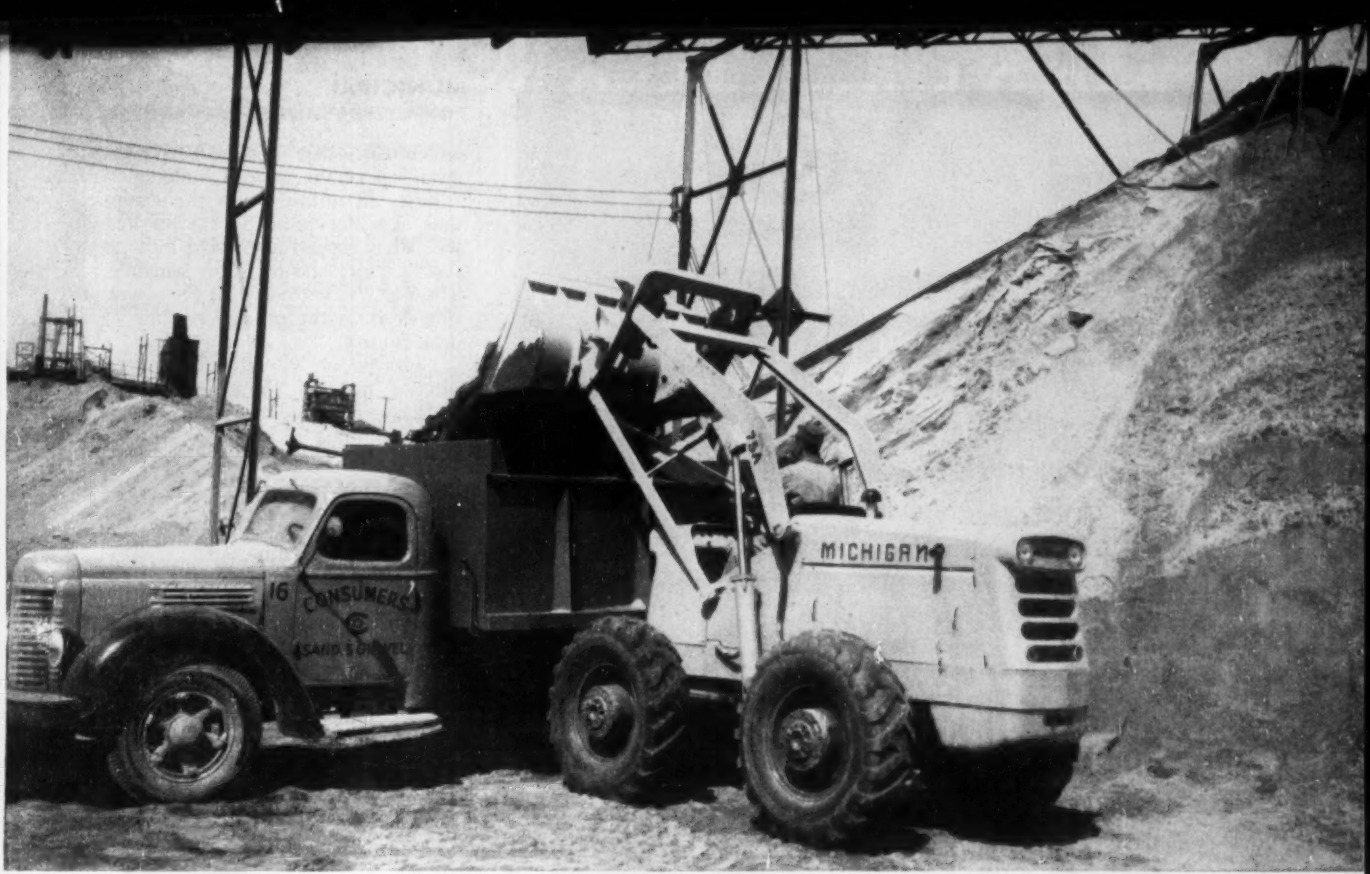
STANDING SOLITARY WATCH amid the graves of weaker neighbors is reinforced concrete Atlantis building in futile resistance against the wreckers' hammers.

for an unexpected profit than the builder who deals with firmer items on his estimate sheet. However, the demolition business—like the construction industry—is highly competitive. The "killing" therefore is an exceptional event, usually the result of an unexpected break in job procedure, a rise in prices on used materials or the surprise appearance of a customer for a large quantity of salvage material previously figured as scrap or waste.

It frequently happens that a wrecker will spend a great deal of money "hand picking" what he considers a highly salable material only to find a scarcity of buyers or enjoy a run on a certain material that he had considered as scrap when estimating the job. In some cases the profit on the one hand will nullifiy the loss on the other.

• **Demolition procedure**—Before the wrecking crew can be turned loose on a demolition project there are several

(*Continued on page 46*)



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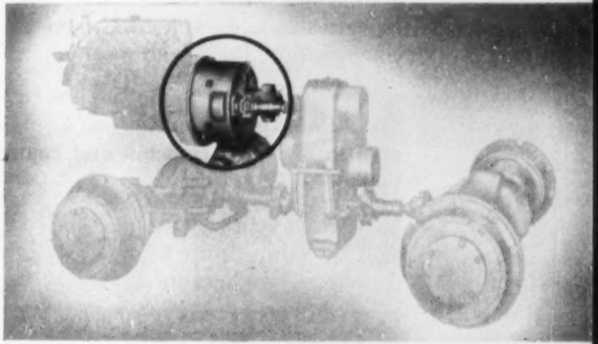
You can do miraculous things with a MICHIGAN* Tractor Shovel because of *extra power when it's needed*—a result of 3-to-1 torque multiplication in the CLARK Torque Converter.

- **Digging into TOUGH Material**—watch a MICHIGAN *force* its bucket into tough, compacted material: not a "shock" action—but a steady, resistless flow of *increasing power* that puts no punishing strain on the driving shafts and gears. Torque multiplication plus the terrific digging power of the hydraulic bucket rams enable the MICHIGAN to perform unbelievable feats.
- **Maintenance and Down-time reduced to a minimum**—the CLARK Torque Converter eliminates the engine clutch: the weakest link in a conventional power-train and the unit most frequently requiring repair.
- **Make ANY Shift at ANY Time**—with the Torque Converter, driving is as easy as handling your car! Shift into Forward or Reverse, into High or Low range *while moving in either direction* . . . the Torque Converter absorbs shocks.
- **Standard Equipment on All Models**—Clark is first to present a full line of Tractor Shovels with Torque Converter as standard equipment. See the MICHIGAN Tractor Shovel. Watch it in action, demonstrating its astonishing power, speed and maneuverability.



Talk to your MICHIGAN dealer; and send for the MICHIGAN Fact Folio, handy file of specifications and action photos—the coupon gets prompt action.

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preliminaries that must be performed regardless of the type of building.

First, all utilities—with the exception of water—must be cut off and adequately capped to prevent leaks or short circuits later on in the schedule. The water is left on in all cases—wetting down is the primary method of dust control.

Construction of sidewalk bridges, interior material chutes and safety platforms is carried on simultaneously with trimming (removal of sanitary fixtures, electrical fixtures, salvable heating equipment, transformers and motors, hardware and the like).

Under most city ordinances, the first exterior operation is the removal of all windows for protection of the public.

After trimming, a wrecking crew attacks the upper floors and the building comes down,

• **Brick masonry structures**—Most of the four and five story tenement structures in mid-town Manhattan are of brick masonry construction.

From sandstone, limestone or tile copings to foundations these buildings are "hand picked" (demolished by hand) and due to the current salvability of used lumber, bricks and steel girders, these buildings present few problems for the wrecker.

Used lumber is selling on the current market at between $25 and $40 per thousand board feet, depending upon the condition of the material and the fickle market.

Second hand bricks are cleaned at the demolition site and trucked to the dealer's yard. They sell bricks by the mileage hauled. For example, a truckload of 6,000 clean used bricks hauled 20 miles sells for $120, which would be about $20 per thousand in truck lots.

• **Reinforced concrete buildings**—Though reinforced concrete structures are trimmed out by hand in the same manner as frame and brick masonry ones, demolition techniques are entirely different.

A disposal chute extending from the roof to loading site on the street is constructed as with other types of buildings and compressor is moved in on the lower level. The wrecking is carried on with compressed air pavement breakers equipped with bull-points. Debris is taken by wheel barrow to the opening above the chute.

An oxyacetylene torch does full-time duty cutting reinforcing bars, pipe, strap hangers and sheet metal. All the metal that is easily separated from the masonry debris is held aside for the metal scrap dealer.

After completion of upper floors, the three or four stories are demolished under the steel ball—probably the most spectacular of the wrecking operations.

• The toughie—The only reinforced concrete structure in the current program for the Lincoln Tunnel is the 26-yr-old Greek Daily Atlantis Building. A landmark in the area, it was purchased by the Port Authority for $365,945. The price represents the largest single purchase in the $6.9-million acquisition program.

Reinforced concrete from basement to penthouse, the structure is a handful for wreckers. The authority is paying $50,000 for its demolition, and the Cosman Company is conjecturing, with the work half done, whether that price is going to see the end of the job.

One of the difficulties presented in big city demolition is the necessity in almost all cases for carrying away every bit of debris. Fires are possible only in the most extensive tracts. In the confined working areas of spotty demolition such as that encountered in approach sites, all disposal is accomplished by truck via the disposal chute.

The third tube demolition program is approximately half finished, and the authority is pushing it with an eye toward completing it in time for ramp and approach work to be ready for the tunnel opening in 1957.

Ask bids for 23-mi bridge

Police juries of Jefferson and St. Tammany parishes in Louisiana are requesting bids for work on the proposed Lake Pontchartrain Causeway that will cross the lake lying between the two parishes.

The project, known as the Greater New Orleans Expressway, will be 23 miles in length and is expected to become a major traffic link. It will tie in at New Orleans with the Pontchartrain Expressway, proposed cross-city artery (ENR Jan. 22, 1953, p. 26).

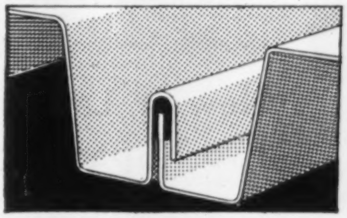
Financing will be by revenue bonds already approved by the people of both parishes. The police juries are authorized to issue up to $50 million to pay for the causeway and some of the approach roads. Other funds—from the state—will be used to develop additional roads and grade separations.

The bonds will be offered for sale after bids are received. Construction of the project is expected to take about 18 months.

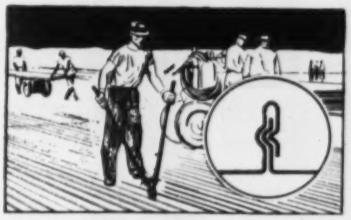
Consulting engineers for the causeway are Palmer & Baker, Inc., of New Orleans.

Quickly erected Q-Deck helps lower roof fire hazard

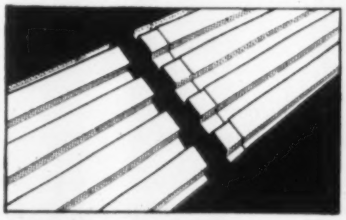
The many unique features of Robertson Q-Deck make it of special interest to the architect and engineer who is concerned about the fire hazard aspect of his flat roof design. Robertson Q-Deck is designed with tight side and end laps to eliminate the need for an inflammable vapor seal. Its two-foot width and long span characteristics mean fewer joints and its surface is either zinc coated or basic Galbestos.



Robertson Q-Deck side laps are designed to form a standing seam. A seal in the form of a continuous caulking material assures a vapor-tight joint.



A special Robertson clamping tool mechanically fastens the side laps together, forming a steel fire barrier that remains intact as long as the structural supports are in place.



Ends of Robertson Q-Deck are sized and countersunk to produce a tight, smooth, two-inch lap joint. This lap, along with the tight side laps, provides a vapor-sealed roof construction.

Excessive amounts of asphalt are eliminated on Robertson Q-Deck because the adhesive is applied to the *insulation . . . not to the steel deck*. This also results in a better bond between the steel and the insulation.

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HOW IMPORTANT is the engineering factor in wellpoint work? This job is a good case in point.

- Soil was coarse sand, overlying an undulating clay base, top of clay being close to subgrade. Confronted with these conditions, contractor quite naturally figured pre-drainage on a basis of continuous pumping 24-hours-per-day.
- Griffin engineers, however, devised a unique layout, using special-screen points and special placement. With this layout, plus careful supervision, the job was speedily dried with only 9 hrs pumping per day (thus bringing operating and fuel costs far below estimate). Yet results were so thorough that drainage influence extended to dewater all footing excavations in the surrounding area.

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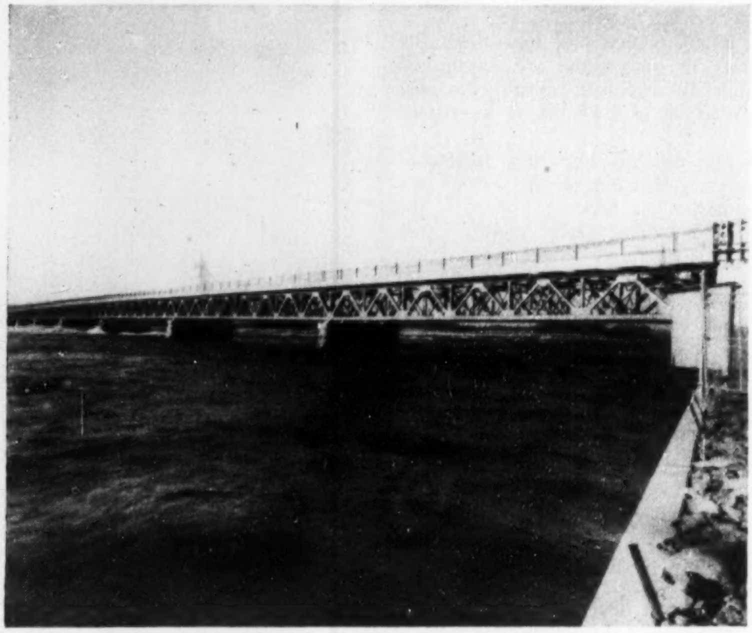


OVER THE ST. LAWRENCE RIVER a few miles from Montreal, Canada, this section of the Monseigneur Langlois Bridge has five 160-ft long central spans.

New St. Lawrence River crossing to have two 7-span continuous truss sections

A few miles upstream from Montreal, Canada, the first crossing of the St. Lawrence River to be built in many years is now nearing completion. To be known as the Monseigneur Langlois Bridge, the crossing consists of two 7-span sections of continuous steel truss which are joined over an island in the middle of the river.

One section of the bridge has five central spans 160 ft. long and two at each end of the section 129 ft. 6 in. long.

The other section, now nearing completion, will have five spans 200 ft long with two at a 160-ft length on either end. All seven spans of each bridge section are continuous.

Included in the project will be a deck plate girder swing span over the Soulanges Canal which runs parallel to the river at this point. The swing span is still in the drawing stage, and plans call for a turning mechanism whose coupling, connecting the motor to the drive shaft, will be hydraulic. The hydraulic coupling will permit inertia forces to be overcome without overloading and consequent damage to the motor. It is the first time such a coupling has been used in this type of structure in Canada.

The new bridge will provide a 31-ft wide highway link between the town of Coteau du Lac on the north side of the St. Lawrence and Valleyfield on the south.

The Department of Public Works of the Province of Quebec is carrying out the project with the Dufresne Engineering Company as contractors for the substructure. Dominion Bridge Co. Ltd., Lachine, Quebec, is the contractor for fabrication and erection of all steel work on the span.

U. S. firm to study plan for Turkey's Bosporus span

The Royal Gorge bridge construction firm of Canon City, Colo., has been asked to study an criticize tentative blueprints for the projected Bosporus suspension bridge. (The bridge would link the European and Asian sections of Istanbul as reported in ENR Aug. 27, 1953, p. 58.)

One plan, that has been submitted by the bridge-building division of the German Krupp works in Essen, calls for a single-span structure (215 ft high, 4,920 ft long) that would cost mo than $71 million and would requi some four years to build.

Industrial Island

Fraser River estate awaits $200-million development

Preliminary work has started on a multi-million dollar development of Annacis Island, a former country estate located at the mouth of the Fraser River near New Westminster, B. C.

The 1,200-acre island—acquired through the estate of the late Duke of Westminster—will be developed to provide "tailor-made" factories for industries on a rental basis. In addition, serviced land will be let on a long-term lease to those industrialists who wish to build their own facilities.

The project is expected to involve an eventual investment of between $175 million and $200 million. British interests backing the development (Grosvenor Properties, Ltd.) anticipate spending $1 million by the end of this year and $4 million by the end of 1955.

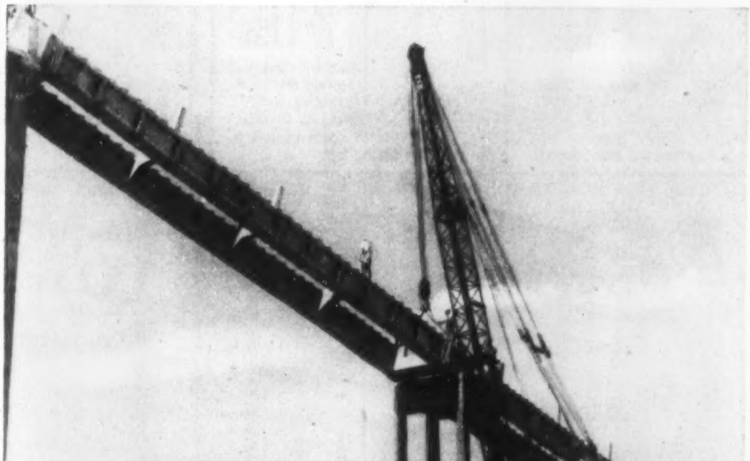
Initial development will be limited to 186 acres, with the first factories expected to be ready for occupancy by fall, 1955. This will be followed by installation of concrete roads, electric power, transportation, railway and dock facilities.

The Canadian government—now in the process of dredging silt from the Fraser River to raise the island to above maximum flood level—has completed plans for construction of a $250,000 combined causeway-trestle to connect Annacis with the New Westminster side of Lulu Island.

The speed of the island's development hinges upon several agreements that are still to be worked out—and on the condition of world markets and the economic position of British Columbia. But adding impetus to the scheme is the possibility of bringing cheap natural gas into the province.

According to preliminary plans, factory design features will depart from traditional British ones. Consultant Architect Warnett Kennedy has in mind windowless walls and high density lighting, as compared with the prevalent British practice of bringing in maximum natural light through windows. He also proposes to suspend a

(*Continued on page 52*)



Concrete gantry, 1½ mi long, to convey coal

To transport coal to a giant gasoline-from-coal synthesis plant, a prestressed precast concrete gantry in South Africa will support three rubber conveyor belts carrying 225 tons of coal per hour. Gantry beams are made of short precast sections which were assembled, grouted together and post-tensioned. About a mile and a half in length, the gantry will lift coal, from nearby mines, about 100 ft to a storage hopper. M. W. Kellogg Co., New York, through its subsidiary Kellogg International, is designer and builder of the synthesis plant.

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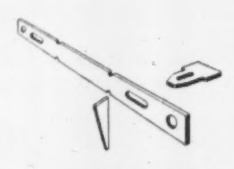
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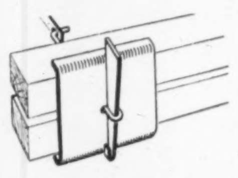
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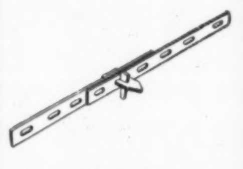
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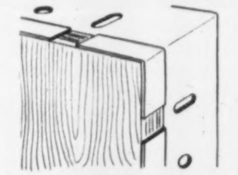
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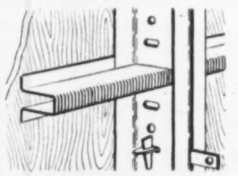
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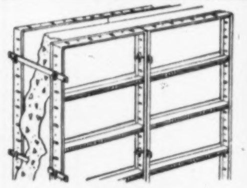
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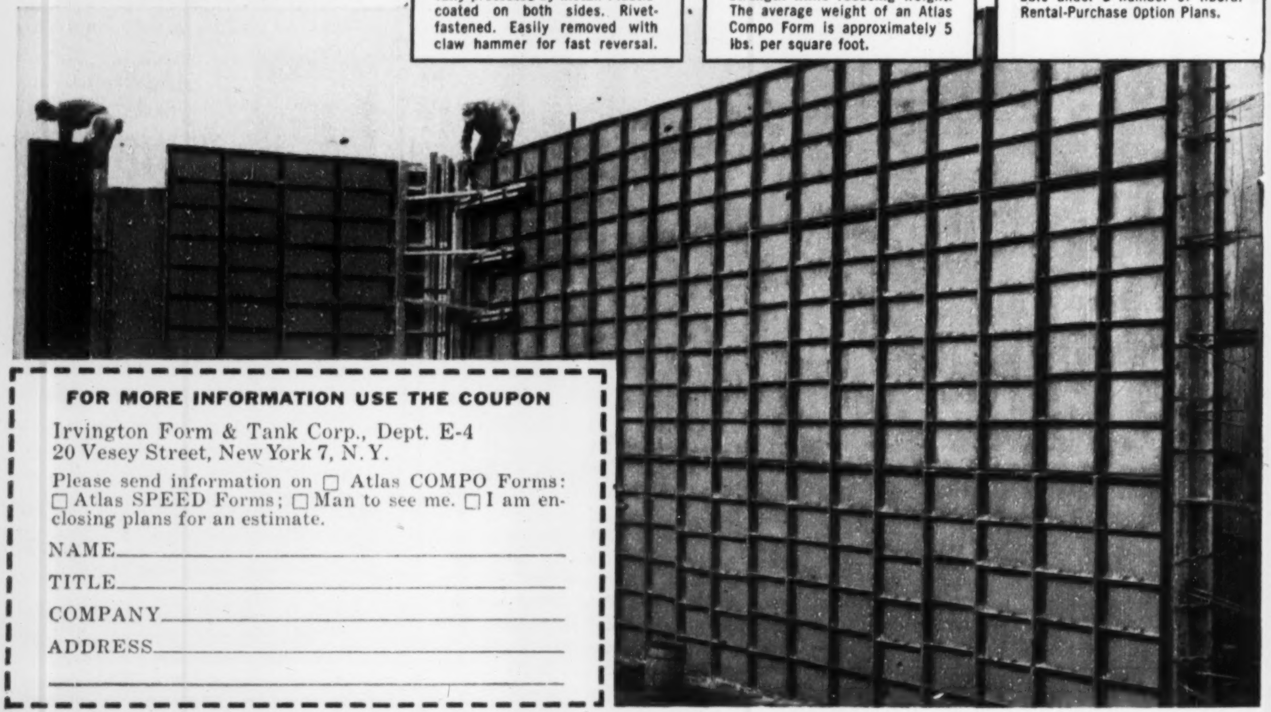

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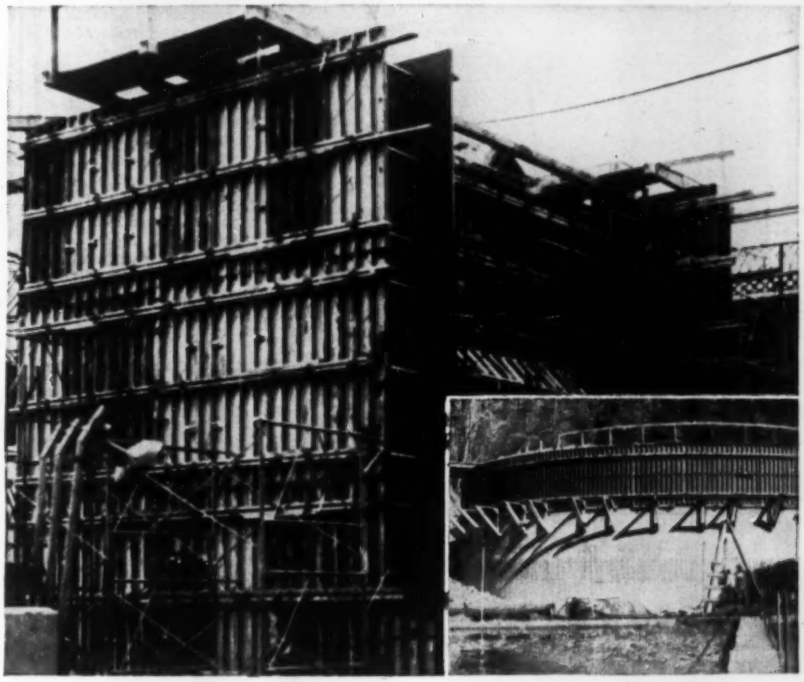

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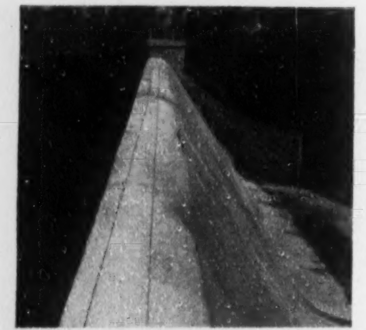

DAM REINTEGRATED WITH "GUNITE" BY CEMENT GUN CO.

Photograph above, left, shows Cement Gun Company crew preparing the spalled and disintegrated downstream side of a Virginia municipal hydroelectric dam for "Gunite." The "Gunite" was applied over reinforcing mesh to a depth of 2 inches greater than the original lines of the dam making the structure stronger and more durable than when it was originally built. To insure years of trouble-free service, "Gunite" was also applied on the upstream side to eliminate seepage through the dam. The finished job is shown in photograph below, left.

Completely pictured and described in our latest catalog, are many instances of dam construction and repair together with many other types of "Gunite" jobs we have done. A request, on your letterhead, for Catalog A2400 will bring your copy by return mail.

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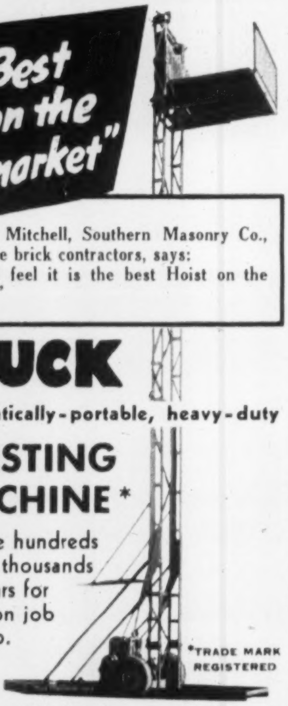

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greater amount of factory equipment from the roof, thus leaving more floor space than is customary in Britain.

Plans for turning the Fraser River island into an industrial estate were patterned after the Trafford Park development started in England in 1895. This former 1,200-acre estate on the outskirts of Manchester was industrialized to provide products for enticing ships up the canal from the Liverpool seaport. Today the development has more than 200 factories and provides employment for 50,000 workers.

Annacis Island construction is being carried out by John Laing & Son (Canada), Ltd. Fifteen of the key personnel already have been brought out from the firm's London headquarters, but the rest of the working force (about 300) will be Canadians.

Brazil considers plan to triple power output

Two bills now before the Brazilian Congress call for the creation of a nation-wide electrification plan and organization of a company to administer it under the name of Electrobras.

The 10-year program—backed by President Getulio Vargas—would more than triple present annual power output raising it from 2.5-billion kwh to 8-billion kwh. Total expenditure involved is estimated at $623 million.

It is planned to construct new power plants, to connect existing plants with one another as well as with new ones, and to standardize current frequencies. The country would be divided into two areas. One—called "preferential"—would be supplied by an inter-connected system of large power stations. The other—a secondary area—would be served by small stations.

Pakistan hires U. S. team to study hydro project

Nine engineers from the International Engineering Co., Inc. (San Francisco subsidiary of Morrison-Knudsen Co.) have been hired by Pakistan to develop plans for the Karnafuli River project in East Bengal.

The project—proposed as the key to industrial and economic development of an area with 42,000,000 population —includes construction of a dam, power house and related works with ultimate capacity of 150,000-160,000 kw. Its purpose is to help control floods, provide irrigation, supply electricity and make navigation possible from the dam site to the port of Chittagong, about 30 miles upstream.

International briefs . . .

• **Australian aluminum**—Australia—planning to harness hydroelectric power to make aluminum one of its major industries—already has contributed more than $20 million toward cost of an aluminum plant now under construction at Bell Bay, Tasmania. When this facility is in operation, at least $5 million will be saved annually on aluminum imported from dollar countries.

• **Afterthought in Auckland**—Faced with problems of feasibility and economy, Auckland, New Zealand, has ended work on the first stage of a $25-million sewage collection and treatment project. To determine whether the program should be continued or modified, the city has hired 5 consultants (2 from England, 3 from California). California contingent; A M Rawn, chief engineer-general manager of the Los Angeles County sanitation districts; Charles G. Hyde, engineering professor, University of California; Dr. David H. Caldwell, partner in the San Francisco consulting engineering firm of Brown & Caldwell.

• **Genoa airport plans**—Construction of an international airport at Genoa has been proposed by the Italian Minister of Defense. One reason: favorable meteorological conditions would make it a practicable air base for protecting not only the port but the whole Ligurian and Tuscan areas. Cost of the 6-year project would exceed $30 million (most of the land will have to be recovered from the sea). Maritime works alone, including a 1.7-mi breakwater, are estimated to cost $15 million.

• **B.C. power plan** — B.C. Power Corp., Ltd., Vancouver, B. C., plans a new dam project to develop the 190,000-hp hydro potential of the Cheakamus River and its tributaries. Preliminary surveys and tests for a site have been completed. To keep pace with its high rate of growth, the corporation has a 1954 budget of $32 million for capital expenditures. About 90% of this is earmarked for electrical services.

• **Dam project approved**—Kaiser Aluminum has been given the "go-ahead" signal from British Columbia on its proposal to build a low head dam on Lower Arrow Lake near Castlegar, B. C. Purpose of the dam is to conserve water for downstream use in U. S. power plants.

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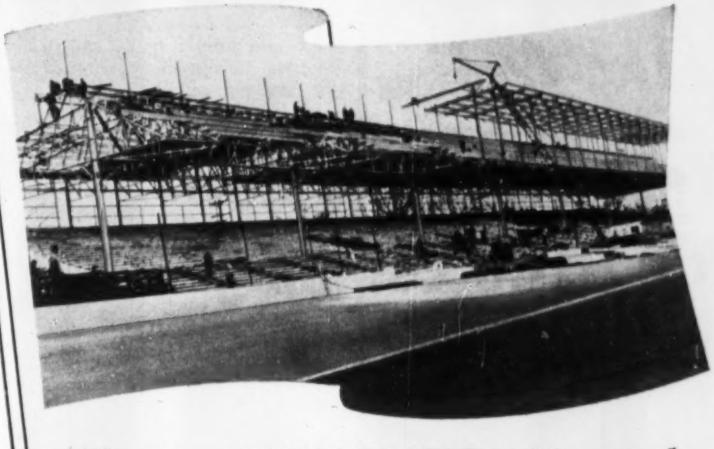

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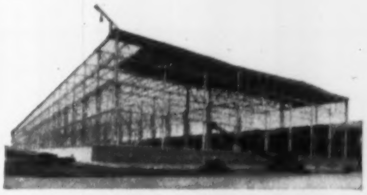
EVERY MEMORIAL DAY draws a still greater audience to the scene of the nation's number-one auto racing classic. And always the Indianapolis Speedway provides a "theatre" worthy of this world-famous event.

Expansion of grandstand facilities — such as shown above — is typical of a planned program that assures each year's record crowd of adequate accommodations. Many phases of this program have called for impressive quantities of fabricated steel . . . structural framework and complete buildings, as well as standard warehouse steel.

The number of such orders handled by International Steel, throughout the years, best attest to the Indianapolis Speedway's satisfaction with International Service.

Maybe you've already discovered how this *completely integrated* service speeds the economical solution to steel fabrication problems. If not, a three cent stamp spent to mail the above coupon may well prove an investment that puts you many dollars ahead — and saves you many a headache! A word to the wise: Copies of the International Steel Buyer's Guide are going fast! So, act *now*.

Steel framing for new plant of Shaw-Box Crane & Hoist Div., Manning, Maxwell & Moore, Inc. at Muskegon, Mich. — supplied by International within a 60-day delivery deadline, during a period of critical steel shortage. Designed jointly around available steel by International engineers and those of the contractors, Cunningham-Limp, Detroit.



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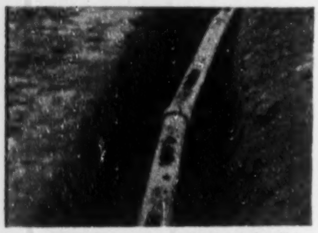

In this California installation, flexible Ring-Tite joints permitted easy conformance to curves.

Speeds assembly of Transite Pressure Pipe

In state after state, contractors are learning that Transite® Pressure Pipe and the new Ring-Tite® Coupling provide fast, sure pipe line assembly with tight, dependable joints . . . strength to assure lasting, trouble-free water mains through the years.

With Ring-Tite, installation costs less—assembly follows digger closely. Typical contractors' comments: "On entire job, trencher and backfiller seldom over 150 feet apart . . ." "Laid 6" Class 150 Ring-Tite at a rate of 5000 feet per 8 hours."

The design of the Ring-Tite Coupling permits quick, easy alignment. To assemble, rubber rings are simply popped into grooves. Then lubricated pipe ends slide in under rings smoothly, easily and surely.

Pipe ends stop positively—with ends automatically separated within coupling. This separation gives the line flexibility to withstand shock and vibration, relieves line stresses, permits conformance to curves. Installations can be completed under adverse weather, temperature or terrain conditions. No complicated equipment is required.

Transite Pressure Pipe and the Ring-Tite Coupling are made of asbestos and cement. Strong and durable, they cannot rust; are highly resistant to corrosion. Tested to A.W.W.A. specifications.

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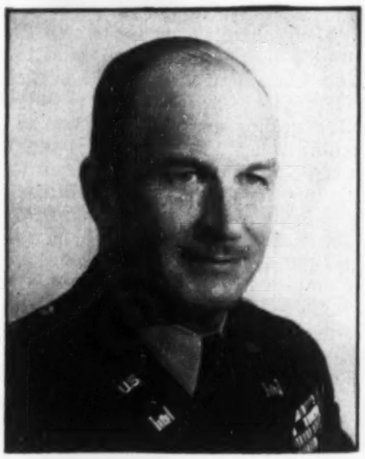
MEN AND JOBS



General Shingler retires to join consulting firm

After 35 years of distinguished service as a Corps of Engineer officer, Brig. Gen. Don G. Shingler retired this month to join the New York consulting firm of Knappen-Tippetts-Abbett-McCarthy. He leaves soon for Korea where he will serve as chief engineer for the firm, which has been retained by the United Nations to head reconstruction in that country.

General Shingler's most recent Corps of Engineers service was as North Pacific Division Engineer, in Portland, Ore., which turned out to be one of his more tranquil posts. In 1952, for example, as division engineer of the Missouri Basin, he had to cope with the river's greatest flood, saving Omaha from a near disaster. In 1948, as chief engineer of the European Command, he had the responsibility for enlarging and maintaining the eastern terminus airfield for the Berlin airlift. In 1941 and 1942, General Shingler was in Iran, where he directed the Motor Transport Service of the Persian Gulf Service Command's "supply road to Russia." And then in 1943, he was chief of the amphibious section of the First Army in the Normandy landings, in which he suffered a fractured back. A year later, however, he was back on duty in charge of sending military lend-lease materials abroad.

General Shingler also served for three years as Assistant Engineer Commissioner of the District of Columbia (1936-39) and as division engineer, Upper Mississippi River Division at St. Louis (1949-51). A graduate of West Point (1918), he also holds a civil engineering degree from M.I.T.

J. C. Stevens retires, was 1945 ASCE president

John C. Stevens, long recognized as one of the top U. S. authorities on power and irrigation problems, and long a leader in professional civil engineering matters, has retired from active practice as head of the firm of Stevens and Thompson, Portland, Ore., consulting engineers.

Mr. Stevens, now 78, will act as a consultant to the firm, which now will be headed by H. Loren Thompson.

Among the many honors that have come Mr. Stevens' way in his long engineering career have been the presidency of the American Society of Civil Engineers in 1945 and award of the Norman Medal by ASCE in 1937.

A native of Moline, Kan., Mr. Stevens was graduated in civil engineering at the University of Nebraska in 1905. Before graduation he served as Assistant State Engineer in Nebraska, and following graduation went to Portland in 1906 as an engineer for the U. S. Geological Survey, remaining in Portland to establish a private practice which he conducted from 1910 to 1912.

In 1912, Stevens became project engineer for the Seros Hydroelectric project at Barcelona, Spain; returning later to Portland where he again entered private practice in an organization which later became Stevens & Koon, specializing in irrigation, water supply, sanitation and related problems. The firm name recently was changed to Stevens & Thompson.

(Men & Jobs continued on page 56)

John C. Stevens

what's NEW in Engineering

A new type of glass lathe is said to handle specialized glass work in labs and some production operations. It can be used to make ring seals, flanges, closures, glass fusings. A novel sleeve grip chuck allows quick set-ups of practically all forms of glass work without elaborate accessories.

How to quench a city's thirst. Faced with the future problem of serving 100,000 people, the City of Vallejo, California, engaged Kaiser Engineers to design and direct construction of a water system that would supply 21,000,000 gallons per day to the city. This $6,000,000 project included 36 miles of pipeline, pumping and treatment plants, reservoirs and a distribution system. Reprints of this story are available upon request.

Relaxation Methods by D. N. de G. Allen, recently published by McGraw-Hill, explains how to use the Relaxation Method to solve various mathematical problems which arise in engineering science and applied physics. It covers in detail such recent advances as three-dimensional relaxation.

Kaiser Engineers has a large staff of engineering and construction experts ready to tackle your problems in all fields of design, engineering and construction. Call or write; Kaiser Engineers, Division of Henry J. Kaiser Company, Kaiser Building, Oakland 12, California.

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Atomic power age

Nuclear physicist joins staff of Republic Steel

Two recent moves by Republic Steel Corp. indicate that it has an eye on the future use of atomic power for making steel.

The corporation hired Dr. Robert P. Peterson, a top nuclear physicist, to study and develop the use of nuclear materials in steel production. At the same time, it announced the purchase of a Mexican source of raw material for titanium.

Since 1952, Dr. Peterson—as chief of the Atomic Energy Commission's Industrial and Production Reactors Branch, Division of Reactor Development—has devoted his time to work relating to the use of atomic energy by industry.

Earlier in his career he worked on the proximity fuse, local fire control and guided missiles at Johns Hopkins University. From 1949 to 1952—as director of research—he worked on the development of atomic weapons at Sandia Corp., AEC's ordnance laboratory where potential atomic explosions are incorporated into weapons.

• **Steel offers big opportunity**—Republic Steel President C. M. White said the physicist was hired because of the part nuclear physics will play in future industrial progress. "Republic intends to occupy an important position in the transformation of atomic energy from weapons to industry."

Dr. Peterson believes that nuclear physics has vast possibilities for the steel industry. "Since steel is one of the great power-consuming industries, development of nuclear power plant that could support expanding power needs for mills and electric furnaces would be a big step in the direction of efficiency and operating economics."

According to the nuclear physicist, it is also within the realm of possibilities that by producing heat from a reactor at the source of low-grade ores, atomic energy may play an important role in the economic concentration of low-grade iron ores.

• **Metals research**—Dr. Peterson points out that his new work might have another important result. "The use of uranium requires special metals and involves new fabricating problems—and these are normal research studies for a steel organization. Thus Republic may be able to contribute toward the goal of economic nuclear power."

The deposits of rutile (an ore from which titanium is extracted) recently acquired by the steel corporation may be the largest yet found in the Western Hemisphere. They are located in a rugged region in southern Mexico, about 30 mi from Port Angelo on the Pacific coast.

Test drilling has been done, and an opening almost 200-ft long has been blasted into the heart of the deposit. Engineers report that the deposit can be mined readily by underground methods and—with no unusual problems—transported to the coast for shipping.

Republic has melted and rolled titanium for over four years. But since it does not do the initial reduction of the ore to titanium "sponge", it is expected that a present producer will be hired for this part of the job.

City engineer cited

George M. Shepard, St. Paul's city engineer since 1922, was honored for outstanding public service at a recent testimonial dinner. W. L. Hinderman, president of the Minnesota Society of Professional Engineers, presented him with a check for $3,000. The money (contributed by 325 men

F. W. Argue

Stone & Webster promotions

F. W. Argue has stepped up into the position of engineering manager for Stone & Webster Engineering Corp. His headquarters will be in Boston.

Argue, who will head engineering and design activities, joined the company in 1941 and has been serving as assistant engineering manager since November 1952.

W. F. Ryan, vice-president, has been named senior consulting engineer for the firm and placed in charge of its engineering report and appraisal activities.

and women) is to be used by the city engineer and his wife for visiting European graves of two sons killed in World War II. One big project ahead for Shepard is supervising St. Paul's new $39-million public improvement program (ENR Nov. 26, 1953, p. 45).

Career briefs . . .

• **Quits state agency**—Because of his pressing private engineering work, Royce J. Tipton has resigned as engineering consultant to the Colorado Water Conservation Board. He has been with that state agency for 20 years. (For the story of how Tipton finds fortunes in water, see ENR, Sept. 3, 1953, p. 66.)

• **Engineer executive**—Blair I. Burnson has been named executive assistant to the general manager of the East Bay Municipal Utility District, Oakland, Calif. Burnson has served as supervising sanitary engineer since 1945.

• **Leaves AEC office**—Reuben E. Cole, director of engineering and construction for the Santa Fe, N. M., Operations Office of the Atomic Energy Commission, has resigned to return to private construction business. Cole, who entered federal service with the Corps of Engineers in 1926, was hired by the Operations Office in 1949.

• **Commissioner changes cities**—F. V. Currie has resigned as commissioner of works at Kingston, Ont., to take over the job of deputy commissioner of works at Ottawa. He will act as assistant to the new commissioner—Cecil Wight, who was Ottawa's director of planning.

• **Association elects officers**—The Air Pollution Control Association has elected five directors: Basil Horsfield, vice-president of the Reynolds Metals Corp., Sheffield, Ala.; Benjamin Linsky, supervising engineer, bureau of smoke inspection and abatement, Detroit; Herbert H. Ulrich, chief smoke regulation engineer, Omaha, Neb.; Elmer P. Wheeler, industrial hygienist, Monsanto Chemical Co., St. Louis; H. A. Belyea, industrial hygiene engineer, Ontario department of health, Toronto, Ont.

• **Ends state service**—George H. Delano has retired after 45 years service with the Massachusetts department of public works. In 1939 he resigned as chief engineer of the department in order to take over as projects engineer for the Boston Central Artery, now nearing completion.

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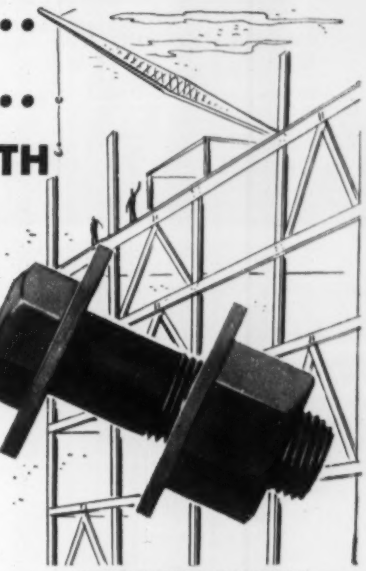

NO BOLT IS ANY BETTER THAN ITS WASHERS

According to leading authorities in modern Structural Steel Framing Practice, high tensile steel bolting of joints instead of riveting, offers erecting contractors and owners of such structures a number of definite advantages:

- A bolted building or bridge can be completed sooner than a riveted structure.
- Hardened steel bolts, with hardened washers, can be torqued up to produce a greater clamping force than cooling of rivets can produce.
- High strength bolts of the same diameter may be substituted for rivets without reduction in size of holes.
- Your labor problem is simplified because of complete independence of field riveters.
- Bolted Construction is QUIET — especially desirable for building new wings to hospitals or for construction in "quiet zones".
- High Strength Bolts have higher strength than comparable rivets.
- High Strength Bolted Joints provide 25% higher fatigue resistance than comparable rivet joints.
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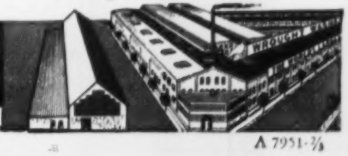

A 7951-⅔

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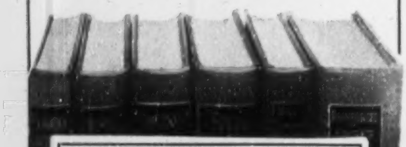

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OBITUARIES

Dana M. Wood, 70, for 20 years on the engineering staff of the TVA, Knoxville, and for some time chief of power studies for the authority died at Wellesley, Mass., May 10. He was prominent in hydraulic developments and previously was connected with the Stone & Webster Engineering Corp., Boston, for about two decades. He retired March 1.

Theodore P. Kilian, 71, a New York tunnel designer, died in Scarsdale, N. Y., May 14. He was a graduate of Columbia University. After working in China with oil exploration crews of the Standard Oil Co. of N. J., he served in the Army. Latterly he had been with Smillie & Griffin, consulting engineers, New York. He had been one of the chief engineers of the Brooklyn Battery Tunnel, the Queens Mid-town Tunnel at the Boqueron Tunnel in Caracas, Venezuela.

Charles M. Moressen, retired civil engineer, died May 8 in Montreal, Que. He founded the Atlas Construction Ltd., of which he was president for more than 20 years.

William A. Peck, 69, died at Denver, Colo., May 5. For 35 years he was a civil engineer for the Denver & Rio Grande Western R.R.

J. W. Hoover, 70, civil engineer of Olympia, Wash., died there May 10. He had been secretary of the Washington State Toll Bridge Authority since 1941 and an employee of the state for nearly 30 years, most of that time as an engineer in the highway department. He received his engineering education at the University of Washington, served as city engineer at Everett, Wash., from 1908 to 1916, when he went into general contracting. He was appointed state highway engineer in 1925, had been with the state ever since except for a return to general contracting in 1927-33.

Noel G. Anderson, 71, from June, 1945, to Dec. 31, 1953, district engineer of the Bureau of Public Roads for South Carolina, died in Milwaukee, Wis., April 19. Formerly he was division engineer for South Carolina, North Carolina, Virginia and West Virginia. He was with the highway department of South Carolina from right after World War I until his appointment to the Bureau of Public Roads in the early 1930's. He also had foreign service in South Africa, South America and Canada.

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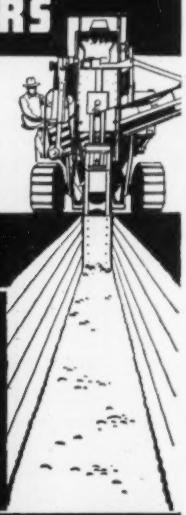

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M E SCIORRA, F S. DEMBEK, Reports.
J. H. WEBBER, M R. ROESSLER, E R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Me., Bangor**—APRON—B.A. 6/3—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., apron exten., overlay Dow Air Force Base, ENG-19-016-54-107, $1,000,000-$2,000,000. Plans deposit $10, Seelye, Stevenson, Value & Knecht, 101 Park Ave., New York, N. Y., archts. CD 5/6.

BIDS ASKED—BUILDINGS

Mass., Watertown—SCHOOL—B.A. 6/1—Town, Francis A. Kelly, Supt. Schools, 30 Common St., East Junior High School addn., alterations, 341 Mt. Aburn St. $750,000. Plans deposit $50 refundable, Coletti Bros., 687 Boylston St., Boston, archts. **(Correction-Contract not awarded.)** CD 4/20, under CA.

Mass., Leicester—SCHOOL—B.A. 6/2—Town, Edward Pleveen, Jr., elementary school, Livermore Hill $535,500, L. W. Briggs Assoc., Inc., 90 Park Ave., Worcester, archt. CD 8/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., Augusta,
Reed & Reed, Woolwich, Me. LB **$109,707**. Guilford Bridge, F.A. Proj. F 037-1 (2), Guilford. Bids May 12. CD 5/4.

MAINE—State Hy. Comn., Augusta,
Lee Brothers, Albion, Mich. LB. **$292,084**. b. conc. 3.24 mi. F.A. Secondary Proj. S 0226 (1), Contr. 2, State Hy. 137, Winslow. Bids May 12.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Mackin Sand & Concrete Products Co., 349 Main St., Greenfield, Mass. LB **$228,787,** est. $235,000. bridge, reconstr. hy. Housatonic River and Rte. 102, Lee. Bids May 11. CD 4/29.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Charles Callahan Co., 50 Call St., Jamaica Plain, Mass. LB **$200,066,** est. $192,000. hy. Auto Rte. 20, Oxford. Bids May 11. CD 4/29.

† **F. D. Rich Co., Inc.,** 322 Main St., Stamford, Conn. LB **$289,000**. readiness hangar Hanscom Air Force Base, ENG-19-016-54-92, BEDFORD, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids May 11. CD 4/20.

CONNECTICUT—State Hy. Comn., State Office Bldg., Hartford,
The Velleca-De Lucia Constr. Corp., 175 Grand Ave., New Haven, Conn., CA, **$179,734,** est. $200,000. c. conc. 3,338 lin. ft. approaches to 8 structures on Wilbur Cross Parkway, Camden, North Haven, Wallingford and Meriden; c. conc. 296 lin. ft. on bridge on Parkway over Rte. U.S. 1, Milford. Bids Apr. 19. CD 4/8.

American Constr. Co., 100 Airport Rd., Hartford, Conn., CA, **$704,202,** Contract 258, east transmission main, Hartford to East Hartford, HARTFORD, CONN. Bd. Contract & Supply, Metropolitan District, 115 Broad St., Hartford, Conn. Bids Apr. 29. CD 5/5, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

J. D. Builders, c/o Jacob Ditch, 483 Center St., Newton, Mass. Owner Builds. **$300,000**. 19-20 RESIDENCES, Clinton Rd. and Martha's Lane, BROOKLINE, MASS.

▲ **Morris & Son Constr. Co., Inc.,** 219 Central St., Lowell, Mass. LB **$2,063,430,** est. $2,000,000. PHA 1-3 HOUSING, South Common Village, Gorham St., LOWELL, MASS. Lowell Housing Auth., 18 Market St., Lowell, Mass. Bids May 11. CD 4/20.

George B. H. Macomber, 19 Milk St., Boston, Mass. CA **$500,000**. ALUMNI HALL, MEDFORD, MASS. Tufts College, Admin. Office, Medford, Mass. Arland A. Dirlam, 673 Boylston St., Boston, Mass., archt. CD 1/23/53.

L. & R. Constr. of Medford, Inc., 36 Earl Ave., Medford, Mass. LB, **$824,333,** est. $750,000. E-306, constr. school, Textile Institute, NEW BEDFORD, MASS. State, Dpt. Educ., Div. Bldg. Constr., 38 Chauncey St., Bostoon, Mass. Bids May 13. CD 4/27.

▲ **Wexler Constr. Co.,** 118 Needham St., Newton Highlands, Mass. CA, **$1,195,000,** est. $1,000,000. HIGH SCHOOL addn., alterations, WALPOLE, MASS. Town, H. S. Bldg. Comn., Joseph Erker Jr., chn., Walpole, Mass. CD 2/16, under LB.

▲ **A. Barbaresi & Son,** 10 Fiske Place, Mount Vernon, N. Y. CA, **$1,617,770,** Eatman Junior HIGH SCHOOL, Lockwood Rd., GREENWICH, CONN. Town Bd. of Educ., Havemeyer Bldg., Greenwich, Conn. Bids May 4. CD 5/11, under LB.

▲ **George A. Fuller Co.,** 597 Madison Ave., New York, N. Y., CA Est. **$6,000,000,** OFFICE, 738-744 Main St., HARTFORD, CONN. Travelers Insurance Co., 700 Main St., Hartford, Conn. Voorhees, Walker, Foley & Smith, 101 Park Ave., New York, N. Y., archts.

▲ **Old Meadown Estate,** c/o Tumble Brook Acres, Inc., N. Main St., Hartford, Conn., Owner Builds, **$2,000,000,** 170 RESIDENCES, WEST HARTFORD, CONN.

The Wadhams & May Co., 15 Lewis St., Hartford, Conn., CA, **$585,314,** CLUB HOUSE, north of Albany Ave., WEST HARTFORD, CONN. The Hartford Golf Club, Golf Rd., West Hartford, Conn. Bids Apr. 27. CD 5/4, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., Central Islip—B.A. 6/3—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, sewer and water lines, Infirmary Bldg., Central Islip State Hospital. Plans deposit $10. CD 7/9, under Public Buildings.

† **N. Y., Lido Beach**—ANTI-AIRCRAFT FACILITIES—B.A. 6/8—U. S. Eng., 80 Lafayette St., New York, Zone 13, anti-aircraft facilities, Serial No. ENG-30-075-54-248. $250,000-$500,000. Plans deposit $100.

† **N. Y., Westhampton**—AIRFIELD FACILITIES—B.A. 6/10—U. S. Eng., 80 Lafayette St., New York, Zone 13, airfield facilities, CRD-6, FY 1951, Suffolk Air Force Base, Serial No. ENG-30-075-54-312. $100,000. William Gehron, 101 Park Ave., New York, Zone 17, archt. CD 10/15/52.

† **N. Y., Newburgh**—FUEL STORAGE—B.A. 6/16—U. S. Eng., 80 Lafayette St., New York, Zone 13, bulk fuel storage, FY 1953, Stewart Air Force Base, Serial No. ENG-30-075-54-278. $100,000. Frederic R. Harris, Inc., 27 William St., New York, Zone 5, engr. CD 9/10/52.

† **N. Y., Plattsburgh**—COLD STORAGE—B.A. 6/22—U. S. Eng., 80 Lafayette St., New York, Zone 13, cold storage warehouse, FY 1953, at Air Force Base. $500,000-$1,000,000. Shreve, Lamb & Harmon, 11 W. 44 St., New York, Zone 36, archts. Seelye, Stevenson, Value & Knecht, 101 Park Ave., New York, Zone 17, engrs. CD 10/15/52.

New York—GAS STATIONS, etc.—B.A. 6/24—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, Type "A", gas station and restaurant at Clifton Springs; Type "B" gas stations and restaurants at Canastota and Leroy. Plans deposit $40.

BIDS ASKED—BUILDINGS

▲ **N. Y., New York**—HOUSING—B.A. 6/8—New York City Housing Auth., 63 Park Row, Zone 38, foundations and general constr. heating and ventilating; electrical work, plumbing, furnishing, erecting elevators for Baruch Houses Proj. No. NY-5-12, Sect. II, incl. Bldgs. Nos. 6, 8, 9, 10, 11 and 16 and handball court area, in area bounded generally by E. Houston St., Baruch Pl., Stanton and Columbia Sts., and by northeasterly portion of area bounded generally by Stanton, Mangin, Rivington Sts. and Baruch Pl. and by northerly portion of area bounded generally by Stanton St., Baruch Pl., Rivington St. and Lewis St. and by area bounded generally by Stanton St., Lewis St., Rivington St. and Cannon St. and by area bounded generally by Rivington St., Baruch Pl., Delancey St., Lewis St., etc., Manhattan Boro. Plans deposit $75, $25 for elevators. CD 3/18/48.

P R O J E C T S   C O V E R E D

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

† **N. Y., Albany**—ARMORY—B.A. 6/15—U. S. Eng., 80 Lafayette St., New York, Zone 13, ORC Armory, $100,000-$500,000. Marcus T. Reynolds, 143 Washington Ave., archt. CD 3/17/53.

SOON LETS CONTRACT—BUILDINGS

Md., Baltimore—Y.M.C.A. BRANCH BLDG.—Young Men's Christian Assn., Franklin and Cathedral Sts., soon lets contract 1 and 2 story, brick, concrete, steel branch Y.M.C.A. 35 St. and Alameda Sts. Plans deposit $35. Jamison & Marcks, 8 E. Mulberry St., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MARYLAND—State Rd. Comn., 108 E. Lexington St., Baltimore, Zone 2,
J. O. & C. M. Stuart, Inc., 3121 South St. N.W. Wash., D. C. CA **$914,387**. grading, drainage, surf. 2.41 mi. relocation U. S. Rte. 240 near Gaithersburg, Contr. M 485-5-320, **Montgomery Co.** CD 4/27, under LB.

Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., Baltimore, Md. LB **$117,944**. Hys. Contr. 1286, sheet asph. paving, BALTIMORE, MD. City, Bureau Hys., 303 Municipal Bldg., Baltimore 2, Md. Bids May 5. CD 4/29.

Wm. F. Wilson & Sons, Brookville, Md. LB **$638,329**. 6 and 10 in. collecting sewers, TANEYTOWN, MD. Mayor and City Council, Taneytown, Md. CD 10/8/51

BUILDINGS

LOW BIDS AND CONTRACTS

Bridge-Duffield Corp., c/o Ralph E. Leff, archt., 12 E. 48 St., New York 17, N. Y., Separate Contracts. **$600,000**. newspaper PLANT, 122-144 Johnson St., between Bridge and Duffield Sts., to be occupied by Brooklyn Eagle, BROOKLYN, N. Y. CD 4/14.

Stewart M. Muller, Inc., 47 S. Riverside Ave., Groton, N. Y. CA **$951,500**. Edgemont Junior and Senior HIGH SCHOOL, Army Rd., GREENBURG, N. Y. Union Free School Dist. 6, Greenburg, Westchester Co., Scarsdale, N. Y. CD 2/17.

▲ **John Kennedy & Co., Inc.,** 205 E. 42 St., New York 17, N. Y. CA. Approx. **$2,000,000**. HOSPITAL addns., alterations, ROCKVILLE CENTER, N. Y. Mercy Hospital, No. Village Ave., Rockville Center, N. Y. Eggers & Higgins, 100 E. 42 St., New York 17, N. Y. Bids Feb. 19. CD 2/11.

Stanford C. Seiple, 809 N. 7 St., Sunbury, Pa., CA **$596,061**. general constr. general remodeling, elimination of hazards and constr. 3 story wing at Nanticoke State HOSPITAL, NANTICOKE, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids May 5, awarded May 12. CD 5/7, under LB.

W. E. Bickerton Constr. Co., 101 W. 22 St., Baltimore, Md. CA **$654,215**. Bear Creek Elementary SCHOOL, near Dundalk, TOWSON, MD. Baltimore Co. Bd. Educ., Aigburth Rd., Towson, Md. CD 4/27, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **Va., Oceana**—ANTENNA POLES—B.A. 6/1—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, radio receiving facility antenna poles, incl. six wood, steel with wire mesh grounding mat antennas, U. S. Naval Air Station, NOY 80166, Spec. 40492 Rev. Plans deposit $10. CD 4/23, under LB.

† **Va., Portsmouth**—PUMP REPLACEMENT—B.A. 6/1—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 1, pump replacement, Naval Ammunition Depot, St. Juliens Creek, NOY 83208, Spec. No. 41800 S/F. Plans deposit $10.

Va., Virginia Beach—B.A. 6/1—City, City Hall, 13,475 lin. ft. 8 and 10 in. sanitary sewers, manholes, etc. Phillip D. Freeman, P. O. Box 6095 Milan Station, Norfolk, engr. CD 4/6/53.

† **Va., Yorktown**—STEAM CONDENSATE PIPING—B.A. 6/1—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, rehabilitation steam and condensate piping, Naval Schools (Mine Warfare), NOY 82868, Spec. No. 42718. Plans deposit $10. CD 2/4.

† **Va., Quantico**—ELECTRIC SYS. REHABILITATION—B.A. 6/9—P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. rehabilitation of electrical systems at Marine Corps Schools, NOY 81454. Plans deposit $50.

Va., Newport News—B.A. 6/11—Water Works Comn., City of Newport News, City Hall, water transmission main from Pine Chapel Rd. to million gal. elevated tank in Phoebus, 24,000 lin. ft. 20 in. c.i. or concrete pressure pipe, appurtenances, Hampton. Plans deposit $25. Williams, Coile & Blanchard, 3415 Virginia Ave., engrs.

(Continued on page 62)

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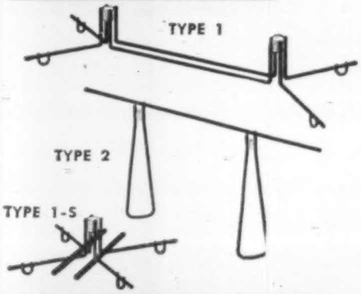

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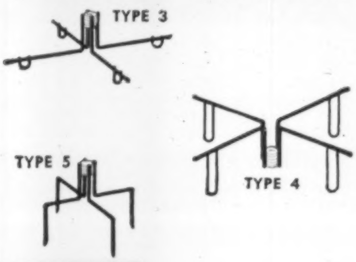
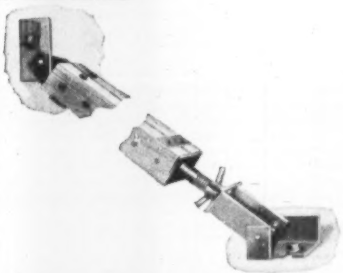
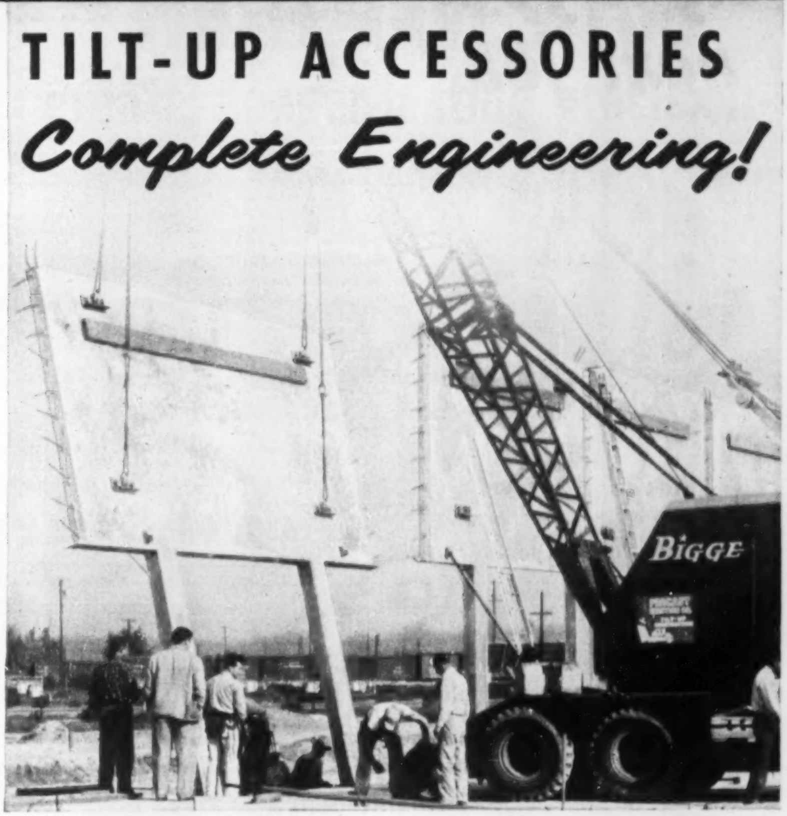


BRACES





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KINNEAR ROLLING DOORS
Saving Ways in Doorways

(Continued from page 60)

† **N. C., Fort Bragg**—ROADS, etc.—B.A. About 6/18—U. S. Eng., 308 Customhouse, Wilmington, site preparation, grading; sand-clay-gravel base, approx. 50,000 sq. yd.; b.conc., approx. 5,000 tons; storm drainage pipe and headwalls; storm drainage inlet structures; approx. 3,000 lin. ft. curb, gutter, concrete; constr. six-stall concrete washrack and appurtenances, Pope Air Force Base, Inv. No. ENG-31-075-54-22. Plans deposit $3.60.

BIDS ASKED—BUILDINGS

† **Va., Norfolk**—SERVICE STATION—B.A. 6/1—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Zone 11, Navy Exchange Service Station, Naval Amphibious Base, NOY 82862, Spec. No. 42712 S/F. Plans deposit $10.

† **Va., Portsmouth**—HOSPITAL—B.A. 6/1—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, addn. to bldg. at U. S. Naval Hospital, NOY 82894, Spec. 42731. Plans Deposit $10.

† **S. C., Columbia**—ARMORY—B.A. About 6/11—U. S. Eng., Custom House, Charleston, constr. Organized Reserve Corps Armory, No. 38-081-54-32.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Tuckman Barbee Constr. Co.**, 6230 Third St., N. W., Wash., D. C., LB **$317,875**, NIKE 1, Battery 10, storage facilities, bldgs., roads, utilities, etc., near FAIRFAX, VA. U. S. Eng., 1st and Douglas Sts., Wash., D. C. Leon Chatelain, Jr., 1632 "K" St. N. W., Wash., D. C., archt. Bids May 3. CD 4/15.

English Constr. Co., Altavista, Va., LB **$359,700**, sewage treatment works, plant, roads, fencing, etc.;

M. S. Hudgins, Joe Hudgins & Claude Pace, Jr., 41 36 St., N. W., Roanoke, Va., LB **$173,871**, interceptor and outfall sewers, WAYNESBORO, VA. City, City Hall, Waynesboro, Va. Bids May 11. CD 4/22.

FLORIDA—State Road Dpt., Volusia County Court House, Deland,

Duval Eng. & Constr. Co., Box 1588, Jacksonville, Fla., LB, **$382,270** San Marco Boulevard Overpass and approaches in Jacksonville, State Rds. No. 5 and 10, Job 7202-187, Duval Co.;

Cleary Bros. Constr. Co., P. O. Box 6815, West Palm Beach, Fla., LB, **$194,301**. bridge and approaches over Miami Canal in Lake Harbor, Job 9310-111, and bridge and approaches over North New River Canal in South Bay, Job 9311-116, Palm Beach Co. Bids May 11. CD 4/27.

▲ **FLORIDA**—State Road Dpt., Volusia County Court House, Deland,

Duval Eng. & Constr. Co., Box 1588, Jacksonville, Fla., LB, **$561,823** 9.962 mi. State Road 15, Job 7208-.06, Duval Co.;

Faulk & Coleman Constr. Co., Tallahassee, Fla., LB, **$77,495**, 13.381 mi. State Road 169, Job 5308-104, Jackson Co.;

Doyle Pope, Quincy, Fla., LB, **$258,466**, 1.036 mi. State Road No. 55, Job 3804-107, Taylor Co.;

Langston Constr. Co., Box 3031, Orlando, Fla., LB **$181,163**, 0.607 mi. State Road 426, Job 7504-107 Orange Co.;

Claussen-Lawrence Constr. Co., Augusta, Ga., LB, **$123,856** 15.678 mi. State Rd., 5, A01-A, and 13, Jobs 7801-113, 7802-.11, 7804-110, 7807-113, in St. Johns Co.;

L. L. Hall Constr. Co., Orange Park, Fla., LB, **$146,668** 5.587 mi. State Road S-419, Job 9258-150, Osceola Co.;

White Constr. Co., Inc., Bronson Fla., LB, **$394,937**, 6.653 mi. State Rd. 10, F I 006-4 (4), Job 3501-205, Madison Co.;

H. E. Wolfe Constr. Co., Box 1361, St. Augustine, Fla., LB, **$549,647** 5.141 mi. State Road No. 5, F-003-4 (16) Job 940-205, St. Lucie Co.;

W. L. Cobb Constr. Co., P. O. Box 977, Tampa 1, Fla., LB, **$189,966** 6.232 mi. State Road 595, S-219 (3) Job 1501-205, Pinellas Co.;

Hooper Constr. Co., Box 4471, Coral Gables, Fla., LB, **$278,421**, 16.144 mi. State Road, S-846, Job 0753-151, Hendry Co.;

J. W. Conner & Sons, Box 2522, Tampa, Fla., LB, **$221,321** 4.361 mi. State Road 80, Job 0701-108, Hendry Co. Bids May 11. CD 4/27.

▲ **Markowitz Brothers, Inc.**, 5600 N. E. 4 Ave., Miami, Fla., CA **$1,025,100**, sewage treatment plant;

Henry G. Du Pree Co., .125 Kings Ave., Jacksonville, Fla. CA, **$211,580**, sewage lift station;

Morris Prosser, Franklin, Ind., CA, **$277,102**, pressure sewer lines, CORAL GABLES, FLA. City, City Hall, Coral Gables, Fla. Grand total $1,513,782. Bids May 4. Smith & Gillespie, P. O. Box 1048, Jacksonville, Fla., engrs.

▲ **Henry Bickel Co.**, 1022 E. Chestnut St., Louisville, Ky., and **Charles E. Cannell Co.**, 2138 Floyd St., Louisville, Ky. CA **$1,549,750**. general contract coagulation basin and filter beds, LOUISVILLE, KY. Louisville Water Co., 435 S. Third St., Louisville, Ky. Bids May 10, awarded May 12. CD 5/13, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Ill., Chicago**—B.A. 6/8—City, City Hall, bascule bridge over Calumet River, 95 St. $1,400,000. CD 11/6.

† **Ill., Scott Air Force Base**—DENTAL CLINIC—B.A. 6/8—U. S. Eng., 475 Merchandise Mart, Chicago, Zone 54. dental clinic and related work, Scott Air Force Base, Serial No. ENG-11-032-54-52. CD 1/28/53.

BIDS ASKED—BUILDINGS

Ind., Gary—SCHOOL—B.A. 6/1—School City of Gary, 524 Garfield St., 2 story Lincoln Elementary School. $800,000. R. S. Kastendieck, 673 Broadway, archt. CD 11/4.

O., Piqua—SCHOOL—B.A. 6/15—Bd. Educ., Junior High School addn., and two new grade schools. $800,000. CD 11/9.

▲ **Wis., Milwaukee**—SHOPPING CENTER—B.A. 7/8—Ed. Schuster & Co., Inc., 2153 N. 3 St., shopping center, $15,000,000. John Graham & Co., 1426 5 Ave., Seattle, Zone 1, Wash., and Brush & Brust, 135 W. Wells St., Milwaukee, 3, Wis., archts and engrs. CD 2/8/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **B. Van Vechten & Chapman**, Baraboo, Wis., CA **$229,702**, roads, walks, parking lots and drainage facilities, Baraboo Ordnance Plant, ENG-47-013-54-12, BARABOO, WIS. U. S. Eng., Badger Ordnance Works, Baraboo, Wis. Bids Apr. 30. CD 4/21.

Payne & Dolan of Wisconsin, 735 N. Water St., Milwaukee, Wis., CA, **$173,786**, sidewalks and paving county roads, MADISON, WIS. Dane Co. Court House, Madison, Wis. Bids Apr. 28. R. R. Swan, county engr.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Louis Garavaglia, 24240 Mound Rd., Center Line, Mich. CA **$1,148,103**, est. $1,150,000. Detroit Toledo Expressway, UI 58-57 C6-U (UI 424 5), BM 58-22 C7-R BM 58-22 C8-R, BM 58-57 C9-R, Monroe Co. CD 5/11, under LB.

Bd. Rd. Comrs. Gratiot Co., Court House, Ithaca, Mich. Owner Builds. **$135,000**. resurf. 27.5 mi. Warner, Washington and Wisner Rds., Garfield, State Rd., Lincoln and St. Charles Rd., ITHACA, MICH. CD 4/30.

BUILDINGS

LOW BIDS AND CONTRACTS

Rainbow Hills, Inc., 6845 Rainbow Lane, Cincinnati, O. Owner Builds. **$880,000**. 88 one story prefab. HOMES on new streets on Graf Dr., CINCINNATI, O. Ayers & Graf, 527 Linton St., Cincinnati, O. engrs. Awarded May 14.

▲ **Harvey H. Richman**, 6100 Tahiti Dr., Cincinnati, O. Owner Builds. **$3,750,000**. 150 one and one and one-half story brick, bsmnt. HOMES in Nottingham Knoll's Subdivision, off North Bend Rd., CINCINNATI, O. Nunlist & Frolicher, Traction Bldg., Cincinnati, O., engrs. Abrom Dombar, 4546 Bristol Lane, Cincinnati, O., designer. Awarded May 11.

Wagner, Inc., Alta Ave., Silverton, O., CA Est. **$500,000**. 40,000 sq. ft., rein.-con., steel packing PLANT, Grand Ave. CINCINNATI, O. Ideal Packing Co., 2141 Baymiller St., Cincinnati, O. Grunkemeyer, Sullivan & Isaacs, Eastern Ave., Cincinnati, O., engrs. CD 2/20/53.

▲ **Byrnes, Kraut Builders, Inc.**, Banning Rd., Cincinnati, O. Owner Builds. **$2,750,000**. 240 one and one and one-half story brick bsmnt. HOMES on new streets off Banning Rd., CINCINNATI, O. Joseph Allen, 4638 Glenway Ave., Cincinnati, O., engr. Awarded May 13.

▲ **Mintz Constr. Co.**, 1946 Lee Rd., Cleveland Heights 18, O. Owner Builds. **$3,000,000**. six two story approx. 38,000 sq. ft. brick OFFICE BLDGS., 3133 Euclid Ave., CLEVELAND, O.

▲ **Albert M. Higley Co.**, 2036 E. 22 St., Cleveland 15, O., CA Approx. **$1,000,000**. 2 story 80,000 sq. ft. masonry BUILDING, for storage, offices, etc. E. 55 St. and Memorial Shoreway, CLEVELAND, O. Graybar Electric Co., 1010 Rockwell Ave., Cleveland 14, O (Correction-contractor). CD 1/5, under CA.

▲ **Albert M. Higley Co.**, 2036 E. 22 St., Cleveland 15, O. CA. Approx. **$1,000,000**. 3 story approx. 74,000 sq. ft. bsmnt. LIBRARY, CLEVELAND, O. Western Reserve University, 10940 Euclid St., Cleveland, O. CD 7/22.

† **Zisken Constr. Co.**, 4430 W. Roosevelt St., Chicago, Ill., LB **$750,708**, 2 underground structures, paving, sewers, water lines, 2 guided missile stations, GARY, IND. U. S. Eng., Merchandise Mart, Chicago 54, Ill. Bids May 7. CD 4/27.

▲ **Ragnar Benson, Inc.**, 4744 W. Rice St., Chicago 51, Ill., LB, **$1,132,621**, HIGH SCHOOL, GYMNASIUM, BENSONVILLE, ILL. School District No. 10, York Rd., Bensonville, Ill. Bids May 12. CD 3/27.

▲ **Ragner Benson, Inc.**, 4744 W. Rice St., Chicago 51, Ill., CA, **$1,500,000**, accounting centre OFFICE, 4355 N. Linder St., CHICAGO, ILL. Illinois Bell Telephone Co., 206 W. Washington St., Chicago 6, Ill. Awarded May 10. CD 3/24.

▲ **Crane Constr. Co.**, 201 E. Walton St., Chicago 11, Ill., CA, **$10,000,000**, three APARTMENTS, 3924 N. Marine St., 3920 Frontier Ave., and 615 Irving Park Ave., CHICAGO, ILL. Lake Shore Management Co., 201 E. Walton St., Chicago, Ill. Shaw, Metz & Dolio, 208 S. La Salle St., Chicago 4, Ill., archts. Awarded May 11.

▲ **Robert E. Nilles**, 717 Indian Road, Glenview, Ill., Own Forces, **$1,000,000**, 50 HOMES, GLENVIEW, ILL.

▲ **Gust K. Newberg Co.**, 2040 N. Ashland St., Chicago, Ill., CA, **$2,771,905**, ACADEMIC BLDG., gymnasium, pool, cafeteria and tunnel, HIGHLAND PARK, ILL. School District 113, 300 Vine St., Highland Park, Ill. Bids Apr. 20, awarded May 7. CD 5/5, under LB.

Engineering Constr. Co., 173 W. Madison St., Chicago 3, Ill., CA, $673,000, constr.;

Allied Structural Steel Co., 20 N. Wacker Dr., Chicago 6, Ill., structural steel, for SKIN MILLING BLDG., McCOOK, ILL. Reynolds Metals Co., First Ave. and 47 St., McCook, Ill. Bids Apr. 15, awarded May 7. CD 4/28, under LB.

▲ **Northwest Constr. Co.**, 4038 W. Parker St., Chicago, Ill., Own Forces, **$1,100,000,** 55 HOMES, NORRIDGE, ILL.

▲ **Well-built Homes, Inc.**, 10 S. LaSalle St., Chicago 3, Ill., Owner Builds, **$3,500,000,** 275 HOMES, NORTHFIELD, ILL.

Courtesy Home Builders, 1950 N. Milwaukee Ave., Chicago, Ill., Own Forces, **$600,000,** 40 HOMES, near PARKRIDGE, ILL.

▲ † **Hagstrom Constr. Co.**, 1567 Selby Ave., St. Paul, Minn., LB, **$1,697,500,** 15 INDUSTRIAL BLDGS., ENG-47-013-54-18, BARABOO, WIS. U. S. Eng., 428 Federal Bldg., Milwaukee 12, Wis. Bids May 12. CD 4/29.

▲ **Hutter Constr. Co.**, 134 Western Ave., Fond du Lac, Wis., CA, **$1,000,000,** 3 story, bsmnt., 60x450 ft., rein.-con., brick NOVIATIATE bldg., GRESHAM, WIS. Alexian Brothers, 1220 W. Belden Ave., Chicago, Ill. Maguolo & Quick, 4908 Delmar Blvd., St. Louis, Mo., archts.

▲ **Ryan Brothers Co.**, S. 3 and Division Sts., Janesville, Wis., CA, Total est. **$5,000,000,** grading site of MFG. PLANT, WAUWATOSA, WIS. Briggs & Stratton Corp., 2711 N. 13 St., Milwaukee, Wis. Bids Apr. 20. CD 4/13.

Beniteau-Harper Corp., 11450 Warwick St., Detroit 28, Mich. Owner Builds. **$126,300.** 1 and 2 story, masonry WAREHOUSE, DETROIT, MICH.

Saul Katz, 1317 Lafayette Bldg., Detroit, Mich. Owner Builds. **$970,000.** two 4 story brick masonry APARTMENTS, 92 family units, East Jefferson St., DETROIT, MICH.

▲ **Leo E. Kuhlman, Inc.**, 9716 Conner St., Detroit 13, Mich. CA Est. **$1,000,000.** brick, steel, concrete high SCHOOL, UTICA, MICH. Bd. Educ., Utica School Dist. No. 1, Utica, Mich. Bids Apr. 28. CD 4/15.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Ia., **Des Moines**—B.A. 6/3—City Council, at Office, Arthur Johnson, city clk., expansion and reconstr. imprvs. at sewage treatment plant, incl. digestor tanks and control house, grit remover tank, converted from present grease tank, new pre-aeration grease removal tank, compressor house, sewage metering equip., sludge drying beds, conduit through storm water tank, conduits, new and reconstructed, hydraulic lift for main gage, 1600 tons of filter stone, 14 rock jetties, distr. chamber to primary tank. Est. $975,000. Plans deposit $15., adv. ENR 5/27. CD 3/5/51.

† **Tex., El Paso**—HEATING and VENTILATING SYS. —B.A. About 6/10—U. S. Eng., Box 1538, 2108 Central Ave. S.E., Albuquerque, N. M., revisions to heating and ventilating sys., incl. (a) addn. of temperature control sys. and revisions to condensate return sys. and safety valve discharge lines in 31 barracks, (b) provide mechanical ventilation for four well houses, (c) provide filters for louvered openings in pump house, (d) provide and install DC and 400 cycle outlets and wiring for G.M. laboratory and classroom bldg., (e) cathodic protection for two sand traps, Fort Bliss, Serial No. ENG-29-005-54-122. CD 7/6/51, under Public Buildings.

† **North Dakota**—B.A. 6/17—U. S. Eng., Riverdale, constr. 24.3 mi. highway, Rtes. 6, 6A, 9, 13 and 13A, Fort Berthold Indian Reservation, Inv. 32-015-54-54. CD 4/27.

BIDS ASKED—BUILDINGS

Kan., Wichita—REPROCESS—B.A. 6/4—Boeing Airplane Plant No. II, Personnel Bldg., constr. reprocess bldg. incl: erection of structural steel, asbestos protected metal, plumbing, heating work, Government Aircraft Plant No. 13, Contr. W33-038-ac-21378. Plans deposit $25. Ramey & Himes, 1206 E. Waterman St., Zone 7, archts.

Minn., Mapleton—SCHOOL—B.A. 6/11—Bd. Educ., A. B. Borchert, clk., 2 story grade school addn. $500,000. Plans deposit $15, Pass & Rockney, Mankato, archts. CD 12/28.

Tex., Follett—GRAIN STORAGE—Bids Asked—Farmers Grain & Supply Co., Follett, 400,000 bu. grain elevator. $200,000. CD 2/17.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

Herbison Constr. Co., Brainerd, Minn. CA **$245,511**. grav. base, road-mixed bit. base, 7.7 mi. between 019 mi. west of TH 38 in Effie and North Jct. of TH 1 and TH 6, Ithaca Co.;

Minnesota Valley Imprvt. Co., Granite Falls, Minn. CA **$202,842**. grav. base, plant-mixed bit. surf. Lincoln and Yellow Medicine Counties;

Anderson Brothers, Box 248, Brainerd, Minn. CA **$127,352**. grav. base, road mixed bit. surf. 20.3 mi. between Aurora and Tower, St. Louis Co.;

J. **W. Craig Co.**, 1814 California St. N.E., Minneapolis, Minn. CA **$286,919**. grav. base, plant-mixed bit. surf. 7.2 mi. in Excelsior and in Hopkins, Carver and Hennepin Counties. Grand total $862,624. Bids Apr. 30. CD 4/14.

C. **H. Peterson Co.**, 5946 Pleasant Ave., Minneapolis, Minn. CA **$134,710**. bit. surf. State Aid Rd. 16, MINNEAPOLIS, MINN. Hennepin Co., O. A. Pearson,

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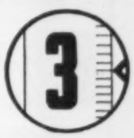

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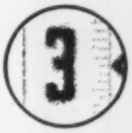

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budget and purch. agt., Court House, MINNEAPOLIS, MINN. Bids May 4. CD 4/13.

▲† **Lipsett, Inc.**, 100 Park Ave., New York, N. Y., CA **$1,930,516**, est $2,488,795, erecting steel towers on 205-mi. 230 kv. Big Bend (S.D.)-Granite Falls (Minn.) transmission line, Missouri River Basin Proj., Spec. DC 4146, SOUTH DAKOTA and MINNESOTA. Bureau Reclamation, Dpt. Interior, Huron, S. D. Bids Apr. 22. CD 5/4, under LB.

KANSAS—State Hy. Comn., State Office Bldg., Topeka,
Kansas City Bridge Co., 928 Broadway, Kansas City, Mo. LB **$764,712**, substructure and superstructure 1,300 ft. Turner Bridge over Kaw River, Wyandotte Co. Bids Apr. 29. CD 4/16.

† **H. B. Zachry Constr.**, Box 2370, San Antonio, Tex., LB, **$972,360**, est. $1,136,593, a water treatment plant, Inv. No. ENG-41-443-54-57, FORT HOOD, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Bids May 12. CD 4/15.

Baxter Constr. Co., 1404 Dunlavy St., Houston, Tex., LB **$287,500**, general constr.;
Gulf Electric Co., 111 N. Sampson St., Houston, Tex. LB **$157,805**, electric for coliseum imprvs., HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids May 5. CD 9/8.

City, Odessa, Tex., Own Forces. **$110,000 (d)** sanitary sewer mains; **$85,000 (I)** storm sewers, ODESSA, TEX. K. E. Esmond, Odessa, Tex., engr.

BUILDINGS

LOW BIDS AND CONTRACTS

C. H. Peterson Constr. Co., National Bldg., Minneapolis, Minn. CA **$578,720**. general contract HOSPITAL, ALEXANDRIA, MINN. Franciscan Sisters of the Immaculate Conception, Little Falls, Minn. Bids May 4. CD 5/4.

Lenci, Lenci & Englund, Virginia, Minn. LB, **$715,947**. 3 story, bsmnt., 116 x 213 ft. INFIRMARY on grounds of St. Mary's Hospital, DULUTH, MINN. St. Louis Co., F. W. Johnson, purch. agt., Court House, Duluth, Minn. Bids May 12. CD 4/22.

Assenmacher Constr. Co., 625 N. 17 St., Lincoln, Neb. CA, **$525,986**, general constr. Teachers College HIGH SCHOOL, LINCOLN, NEB. University of Nebraska, 12 and R Sts., Lincoln, Neb. Bids May 13. CD 4/27

▲ **M. C. Andrews, Jr.**, E. Main St., Grand Prairie, Tex. Own Forces. **$482,550**, Sec. 3, 48 brick veneer DWELLINGS, concrete slab fdn.; **$575,500**, Sec. 4, 59 frame, brick trim dwellings, concrete slab fdn.; **$438,700**, Sec. 5, 45 frame, brick dwellings, concrete slab fdn., ARLINGTON, TEX. Grand total $.,496,750. CD 2/12.

Tellepsen Constr. Co., Box 2536, Houston, Tex., CA, **$500,000**. main PLANT OFFICE addn., SAFETY and TRAINING BLDG. addn., STOREHOUSE changes and alterations, BAYTOWN, TEX. Humble Oil & Refining Co., Humble Bldg., Houston, Tex. Milton McGinty, 2425 Ralph St., Houston, archt. for main office bldg.; Jack Reber, Baytown, Tex. archt. for safety and storehouse, CD 11/24.

Hill & McCordic, Builders, 235 Beryl St., San Antonio, Tex., Own Forces. **$345,000**. 31 brick veneer DWELLINGS, concrete slab fdn.; **$325,150**, 36 frame, brick trim dwellings, concrete slab fdn.;
Purchase, Sub-contracts, **$315,500**, 27 frame dwellings, concrete slab fdn., VICTORIA, TEX. Grand total $985,650. CD 4/22.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Calif., March Air Force Base**—SHOP—B.A. 6/10—U. S. Eng., 751 S. Figueroa St., Los Angeles, armament and electronics shop, March Air Force Base, ENG-04-353-54-87, $300,000. CD 12/10/52.

† **Arizona-Nevada**—AIR SWITCH—B.A. 6/17—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Sch. 1, Item 1, air switch for Casa Grande Sub-station, Davis Dam Project, Spec. DS4173. L. N. McClellan, ch. engr.

BIDS ASKED—BUILDINGS

▲ **Calif., Twenty Nine Palms**—HOUSING—B.A. 6/1—Dpt. Navy, San Diego, construct, manage and finance housing 29 Palms, $3,000,000. Karl F. Tuttle Eng. Co., Inc., 4251 E. Live Oak Arcadia, engr. John N. Douglas, 3733 E. Colorado St., Pasadena, archt.

▲ **Calif., Sacramento**—OFFICE—B.A. 6/22—State Dpt. P. Wks., Div Architecture, Sacramento, 6 story office for Dpt. of Employment. CD 3/29/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IDAHO—State Hy. Dpt., Boise,
H. G. Palmberg, Astoria, Ore., LB, **$664,225**, constr. roadway 1.11 mi. U.S. 95, north approach to bridge, Bonner Co. Bids May 11. CD 4/13.
WASHINGTON—State Hy. Comn., Olympia,
Neukirch Brothers, 745 Bellvuew Ave. N., Seattle, Wash., LB, **$239,597**, twin rein.-con. girder and T-beam bridges at Blakeslee Junction overcrossing State Hy. 1, with readjusting 0.069 mi. county road, Lewis Co. Bids May 11. CD 4/28.
WASHINGTON—State Hy. Comn., Olympia,
Associated Sand & Gravel Co., 2508 Colby Ave., Everett, Wash., LB, **$96,415**, surf. 27.81 mi. Hys. 1-A, 1-D and 5-A, Skagit, Island and King Counties;
H. Kathman, 12054 23 Ave. N. E., Seattle, Wash., LB, **$166,753**, 2.257 mi. State Hy. 13-A, F.A.S.S. 0453 (3), Pacific Co. Bids May 11. CD 4/28.
cancelled bids to have been opened May 11, 18.968 mi. feeder roads, in Blocks, 49 and 43, Adams Co. CD 4/28.

▲ **OREGON**—State Hy. Comn., Highway Bldg., Salem,
Rogers Constr. Co., 11760 N.E. Glisan St., Portland, Ore. CA **$365,311**, rock base and oiling 16.12 mi. Big Eddy-Rufus Sect., Columbia River Hy., Wasco and Sherman Counties;
J. W. Briggs, Box 283, Bend, Ore., CA **$693,998**, grading, paving 8.48 mi., 120 ft. concrete bridge, Sherman Junction-Willowdale Sect., The Dalles-Calif. Hy., FAP BF-72 (2) and BF-72 (3), Wasco and Jefferson Counties;
C. E. Leeseberg, Nyssa, Ore., CA. **$67,130**, rock production on Central Oregon and Vale-West Hys., Malheur and Harney Counties. CA **$139,557**, grading, oiling 7.13 mi., Hy-Line Co. Rd. FAP S-165 (1), Malheur Co.;
Berke Bros. & C. R. O'Neil, Pendleton, Ore., CA **$165,015**, grading 1.9 mi. Booth Ranch unit, Shady-Canyonville Sect., Pacific Hy., FAP BFI-78 (23), Douglas Co. Grand total $1,431,011. Bids May 11. CD 5/5.

▲ **OREGON**—State Hy. Comn., Highway Bldg., Salem,
Rogers Constr. Co., 11760 N. E. Glisan St., Portland, Ore., CA **$289,179**, paving 7.12 mi., Clatskanie-Delena sect. Columbia River Hy., FAP F-221 (3), Columbia Co.; CA **$544,349**, grading, paving 12.77 mi. Willamette Junction-Walker Mountain Rd. and Chemult-Beaver Marsh units, Willamette Junction Sect., The Dalles-California Hy., FAP BF-126 (3), Klamath Co.;
Central Heating Co., Eugene, Ore., CA **$162,637**, grading, paving 5.18 mi. West Unit, Eagle Rock-Post sect., Paulina Hy. FAP S-109 (2) and S-154 (1), Crook Co.;
Acme Constr. Co., Box 306, Eugene, Ore., CA **$88,721**, paving 5 mi. Kirk Rd-Spring Creek Hill sect., The Dalles-Calif. Hy., Klamath Co.;
Fred Rouse & Henry H. Miller, Salem, Ore., CA **$94,928**, grading, oiling 3.18 mi. Burns Corner-Suver Co. Rd. FAP S-149 (1), Polk Co. Grand total $1,179,814. Bids May 12, awarded May 12. CD 5/5.

▲ † **United Concrete Pipe Corp.**, Baldwin Park, Calif., CA, **$2,298,484**, est. $2,986,643. Unit 3, earthwork, pipe lines and structures incl. 11 pumping plants, Central Valley Proj., Spec. DC 4137, CALIFORNIA. Bureau Reclamation, Dpt. Interior, Lindsay, Calif. Bids Apr. 22, awarded May 12. CD 5/4, under LB.

▲ **H. K. Ferguson**, 411 W. 5 St., Los Angeles, Calif., CA, **$1,483,039**, est. $1,750,000 transit shed and retaining wall at Berths 24 and 25 Outer Harbor, Pier C, LONG BEACH, CALIF. Long Beach Harbor Dpt., 1331 El Embarkadero, Long Beach, Calif. Bids May 6. CD 5/13, under LB.

▲ **A. B. C. Constr. Co.**, 12420 S. Bloomfield Ave., Norwalk, Calif., LB, **$2,330,346**, Schedule 70P for constr. 3.88 mi. 108 in. concrete pipe line;
American Pipe & Constr. Co., 6435 Firestone Blvd., South Gatel, Calif., LB, **$2,057,955**, Schedule 71P constr. 4.58 mi. 108 in. concrete pipe line extending from Cajalco Tunnell to Corona for Lower Feeder of Colorado River Aqueduct, LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern California, 306 W. 3 St., Los Angeles, Calif. Bids May 12. CD 4/28.

Peter Kiewit Sons Co., 345 Kieways, Arcadia, Calif., CA, **$814,259**, est. $500,000. Project 286, Manhattan Beach storm drain, Manhattan Beach, LOS ANGELES, CALIF. Los Angeles County Flood Control District, 2250 Alcazar St., Los Angeles, Calif. Bids Apr. 30, awarded May 11. CD 5/7, under LB.

▲ **Walsh Constr. Co.**, 785 Market St., San Francisco, Calif., LB, **$1,533,720**, constr. of San Juan Tunnel for Lower Feeder of the Colorado Aqueduct, San Bernardino and Orange, LOS ANGELES, CALIF. Metropolitan Water District of Southern California, 306 W. 3 St., Los Angeles, Calif. Bids May 12. CD 4/22.

Stroud-Seabrook, Box 97, Bakersfield, Calif., LB, **$134,557**, est. $100,000, sewage treatment plant; LB **$245,213**, est. $250,000, gravity sewer and raw sewage force mains, RUBIDOUX, CALIF. Rubidoux Community Services Dist., 4190 Riverview Dr., Rubidoux, Calif. Bids May 6. CD 4/22.

BUILDINGS

LOW BIDS AND CONTRACTS

† **Sound Constr. & Eng.**, 1300 Aloha St., Seattle, Wash., LB, **$973,191**, Special AAA Facilities, launcher area, ENG-45-165-54-23, Franklin Co., CAMP HANFORD, WASH. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids May 13. CD 4/29.

▲ **Viesko & Post**, Salem, Ore., LB **$1,050,500**. FINE ARTS BLDG., WOMENS DORMITORY, HEALTH CENTER, SALEM, ORE. Willamette University, Salem, Ore. Bids May 14. CD 4/21.

▲ **Steed Brothers**, Box 359, Alhambra, Calif., CA, **$2,828,900**, New San Gabriel High SCHOOL, ALHAMBRA, CALIF. Alhambra City School Dist., 601 N. Garfield Ave., Alhambra, Calif. Bids May 4, awarded May 7. CD 5/11, under LB.
Watt Constr. Co., 15127 Crenshaw Blvd., Gardena, Calif., CA, **$950,000**, 100 frame, stucco DWELLINGS, Barnwall and Carfax Sts. and Ripton Dr., BELLFLOWER, CALIF. Western Projects, 3842 Wilshire Blvd., Lon Angeles, Calif.
Paul W. Speer, Inc., 3425 Cahuenga Blvd., Los Angeles, Calif., LB, **$499,900**, Cortez SCHOOL, COVINA, CALIF. Covina City School Dist., 475 N. 2 St., Covina, Calif. Bids May 6.
Wadley Constr. Corp., 5452 Pomona Blvd., Los Angeles, Calif., CA, **$518,479**, Leffingwell SCHOOL, EAST WHITTIER, CALIF. East Whittier School District, 14535 E. Whittier Blvd., East Whittier, Calif. Bids Apr. 27, awarded May 10. CD 5/6, under LB.
R. J. Daum Constr. Co., 6803 West Blvd., Inglewood, Calif., LB, **$321,058** South Gate County COURTS BLDG., South Gate, LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids May 7. CD 4/15.

† **Veterans Admin.**, Munitions Bldg., Wash., D. C., rejected bids May 4, altering BUILDING 157 for Special Services at Veterans Administration Center, LOS ANGELES, CALIF. CD 3/10.

R & F Development Co., 1033 Foothill Blvd., La Canada, Calif. Owner Builds. **$365,000**, 50 frame, stucco DWELLINGS, Ronald, David and Jane Sts., RIVERSIDE, CALIF.

▲ **Cunningham Co.**, 5407 E. Village Rd., Long Beach, Calif., CA, **$1,670,000**, 97 frame, DWELLINGS, Santa Clara and Spruce Sts. in Tract 2061, SANTA ANA, CALIF. Statford Square, Inc., 5407 E. Village Rd., Long Beach, Calif.

CANADA

BIDS ASKED—BUILDINGS

Ont., Hanover—HOSPITAL—B.A. 5/31—Hanover Memorial Hospital Board, H. Mann, secy., hospital addn. $300,000. L. G. **Bridgman, Royal Bank Chambers, London, archt.**

▲ **Que., Quebec City**—FACTORY—B.A. 5/31—Rock City Tobacco Co. Ltd., 224 Dorchester St., Quebec City, concrete, steel, brick factory addn., Prince Edward St. $1,200,000. **G. Arnyot, 2 Belveder St., archt**

Ont., Aylmer—HOUSING—B.A. 6/3—Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Ont., 75-unit rental housing. $750,000. H. I. Stricker c/o owner, engr.

▲ **Ont., North Bay**—HOUSING—B.A. 6/3—Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Zone 12, 100-unit **rental housing. $1,100,000. H. I. Stricker, c/o owner, engr.**

▲ **Ont., Picton**—HOUSING—B.A. 6/3—Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Zone 12, 100-unit rental **housing. $1,100,000. H. I. Stricker, c/o owner, engr.**

▲ **Ont., Ottawa**—VETERANS MEMORIAL—B.A. 6/30—Dpt. P. Wks., Hunter Bldg., 10 story, 177x297 ft., concrete, West Building of office buildings, Veterans Memorial Bldg., Wellington St. $5,000,000. Plans deposit $500. E. A. Gardner, c/o **owner, archt.** CD 2/17.

SOON LETS CONTRACT—HEAVY CONSTRUCTION

▲ **Ontario**—PIPE LINE—Niagara Gas Transmission Ltd., 19 Toronto St., Toronto, soon lets contract 85 mi. 20 in. all-welded steel pipe pipe line from Queenston near Niagara Falls to Port Credit. $7,500,000 Canadian Bechtel, Ltd., 44 King St. W., Toronto, engrs. CD 10/30/50.

SOON LETS CONTRACT—BUILDINGS

▲ **Ont., Ottawa**—OFFICE—Wittington Investments Ltd., 140 Wellington St., soon lets contract 10 story, bsmnt., concrete, steel, stone. Commonwealth Office Bldg. Metcalfe and Slater Sts. $1,000,000. **Abra & Balharrie**, 55 Metcalfe St., archts. CD 10/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

L. R. Brown Co. Ltd., 437 Bay St., Sault Ste. Marie, Ont., CA, **$171,101**, 18,000 ft. 10- to 18-in. sanitary sewers, sewage pumping station and sewage force mains in Bayview Subdivision;
Keystone Contractors, Ltd., 2490 McDougal St., Windsor, Ont., CA, **$359,913**, 15,000 sq. ft. 27- to 36-in. trunk sewers in west end of city SAULT STE. MARIE, ONT. City, H. Smale, mayor, City Hall, Sault Ste. Marie, Ont. Bids May 7, awarded May 10. CD 4/21.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Atlas Constr. Co. Ltd.**, 4781 St. Catherine St. W., Montreal, Que., CA, **$6,580,700**, services at army Camp incl. 17 mi. roads, sewers, water mains, hot water piping and gravel fill, CAMP GAGETOWN, N. B. Defence Constr. Ltd., 46 Lyon St., Ottawa, Ont. Bids May 4, awarded May 10. CD 4/19.

▲ **Bon Logis Ltd.**, Rideau St., Ottawa, Ont. Owner Builds. **$1,800,000**, 180-unit HOUSING in Overbrooke, OTTAWA, ONT.
Foundation Co. of Canada Ltd., 1220 Bay St., Toronto, Ont., CA, **$500,000**, 2 story, bsmnt., 61x151 ft., OFFICES and 1 story, 162x332 ft., steel frame, brick PLANT, TORONTO, ONT. Canadian-Johns-Manville Co. Ltd., 199 Bay St., Toronto, Ont. **Margison & Babcock**, 119 Isabelle St., Toronto, Ont., engrs. Awarded May 10.
Cabana Constr., 283 Ste. Catherine St., Magog, Que., CA, **$275,000**, steel, concrete FACTORY, Katevalle Rd., MAGOG, QUE. Owner, c/o contractor.

▲ **Dicn & Richard, Inc.**, 5083 St. Denis St., Montreal, Que. Owner Builds. **$9,500,000**, HOUSING PROGRAM on new streets between Sherbrooke and Boyce Sts., Longue Pointe District, MONTREAL, QUE. **E. Bujold**, 6904 Molson St., **Montreal, Que., archt.**

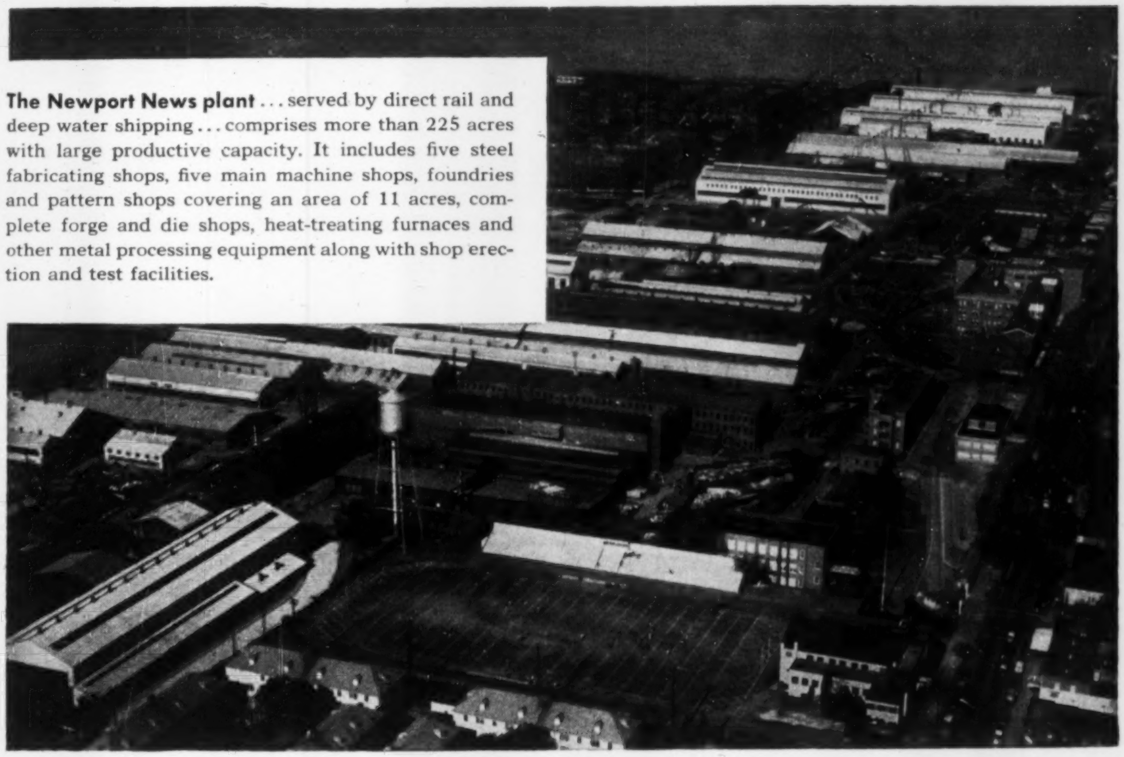
Proposed Projects

WATER SUPPLY

▲ **O., Chillicothe**—City, WW imprvs., expansion $1,000,000. Alfred LeFeber & Assoc., 2933 Woodburn St., Cincinnati, consult. engrs.

Wash., Mercer Island—Mercer Island Water District, Mercer Island, bond election June 29, expanding water system. **$920,000**. Carey & Kramer, 1917 1 Ave., Seattle, consult engrs.

(Continued on page 66)



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(Continued from page 64)

SEWERS, WASTE DISPOSAL

▲ **Ind., Anderson**—City, City Hall, sewage disposal plant addns., imprvs. **$3,500,000.**

▲ **Ind., Connersville**—Bd. P. Wks., City Hall, revised plans for sewage treatment plant and sewerage system extensions, **$4,000,000**. Garns & Moore, 827 Ind. Pythian Bldg., Indianapolis, Zone 4, consult. engrs. Bids 7/27/53 rejected. CD 7/31/53, under LB.

▲ **Ind., Decatur**—City, City Hall, sewage plant, **$1,000,000**. CD 8/20/46.

▲ **O., Canton**—Comrs. Stark Co., Court House, storm sewer to serve 715-acres in Reedurban area from West Manor, just outside Canton City limits to Genoa, near Massillon, **$1,200,000**. CD 6/11.

▲ **Wash., Mercer Island**—Mercer Island Sewer district, Mercer Island, bond election June 29 to finance first unit of sewerage system, **$2,500,000.**

BRIDGES

▲ **Ill., Chicago**—Chicago Park District, 425 E. 14 St., Zone 5, new connection of Lake Shore Dr. with Balbo Dr., **$60,000**; new connection of Lake Shore Dr. with Jackson Blvd., **$60,000**; grade separation at Lake Shore Dr. at Monroe St., **$940,000**; grade separation at Lake Shore Dr. and Roosevelt Rd., **$1,060,000**; grade separation at Lake Shore Dr. at Randolph St., **$1,530,000**; grade separation at N. Michigan Ave. and Lake Shore Express Route **$2,700,000**. Ralph H. Burke, 20 N. Wacker Dr., Zone 6, consult. engr.

NEW YORK—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

St. Lawrence Co.—new bridge to carry Rte. 11 over Oswegatchie River in village of Gouverneur. **$900,000.**

▲ **Man., Winnipeg**—City, G. L. Gardner, clk., bridge "Midtown", near Disraeli St. **$5,000,000.** J. B. Striowski, c/o owner, engr.

STREETS AND ROADS

▲ **NEW JERSEY**—State Hy. Dpt., State Hy. Office Bldg., Trenton,

Mercer Co.—extending John Fitch Way to Parkside Ave., approx. 2 mi., Trenton. **$1,500,000**. CD 3/27/53.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

St. Lawrence Co.—reconstr. Rte. 3 between Fine and Star Lake, incl. grade crossing at Carthage Branch, New York Central R. R. and new bridge over Little River in Oswegatchie, **$1,500,000**.

▲ **NEW YORK**—Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany,

Westchester Co.—Cross Westchester Expressway: 12 mi. connecting New York-Buffalo Thruway with New England Thruway-Elmsford to Rye. **$40,000,000**. Charles H. Seils, 70 E. 54 St., New York, Zone 17, consult. engr.

▲ **Wis., Milwaukee**—Milwaukee Co. Comn., Court House, county expressway, **$12,250,000**. Parsons, Brinckerhoff, Hall & Macdonald, 61 Broadway, New York 6, N. Y. and Ammann & Whitney, 724 E. Mason St., Milwaukee, Zone 2, consult. engrs. CD 12/1/50.

AIRPORTS

▲† **Tex., San Antonio**—FACILITIES—U. S. Eng., Box 1229, Galveston, plans by Ralph H. Cameron, archt.-consult. engr., 1519 Transit Tower Bldg., addnl. facilities at Brooke Medical Center, Fort Sam Houston. Approx. **$5,000,000**. CD 4/30/52.

PUBLIC BUILDINGS

▲ **Calif., Pomona**—SCHOOLS—Pomona Unified School District, Pomona, voted **$2,000,000** bonds, schools imprvs. CD 3/12.

▲ **Ill, Chicago**—UNDERGROUND PARKING GARAGE—Chicago Park District, 425 E. 14 St., Zone 5, underground garage under Park along East Lake Shore Dr. at Michigan Ave. **$1,900,000**. Ralph H. Burke, 20 N. Wacker Dr., Zone 6, consult. engr.

▲ **Ill., Chicago**—MENTAL HOSPITAL—Illinois Welfare Dept., Dr. Otto L. Bettng, Springfield, mental hospital in West Side Medical Center, Taylor and Ward Sts. **$5,000,000**. CD 3/14/51.

▲ **Mich., Eloise**—HOSPITAL—Wayne Co. Bd. Institutions, Frank E. Kelley, chn., 608 Griswold Bldg., Detroit, 1,000-bed hospital for treatment of acute illness, **$20,000,000**; rehabilitate and imprv. existing bldgs. incl. power plant addns., **$5,250,000**; laundry plant, **$500,000**; bakery, **$250,000**; apartments to house professional personnel, **$1,000,000**; occupational and therapy bldg., **$3,000,000**, Wayne County General Hospital. CD 9/7/44.

▲ **Mich., Livonia**—SCHOOL—City, Bd. Educ., Dr. Cole S. Brembach, supt., voted **$4,000,000** bonds May 4, 54 elementary school rooms, and 24-room Junior High School. CD 4/20.

▲ **N. J., Jersey City**—COUNTY ADMINISTRATION—Bd. Freeholders Hudson Co., Court House, plans by Mascolo & Masumian, 880 Bergen Ave., county administration bldg. **$5,000,000**. CD 12/4/46.

▲ **N. J., Princeton**—SCHOOL—Borough, Borough Hall, high school addn. **$1,770,000**. CD 3/9.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., 49 Flatbush Ave. exten., Zone 1, plans by Lama, Proskauer & Prober, 395 Pearl St., Zone 1, 3 story Junior High School No. 166, 788-852 Van Siclin Ave. E-844. **$2,900,000**.

O., Fairview Park—SCHOOL—Fairview Park School Bd., Lewis F. Mayer, supt., 4507 W. 213 St., voted bonds May 4, elementary school and addn. to high school. **$900,000**. Fulton, Krinsky & DelaMotte, 6014 Euclid St., Cleveland, archts. CD 4/21.

▲ **O., Lancaster**—SCHOOL—Lancaster School Dist., Lancaster, voted **$2,490,000** bonds May 4, two Junior High Schools, one elementary school and addns. to other elementary schools. CD 1/20.

▲ **O., Oxford**—SCHOOL—Bd. Educ., Oxford, voted bonds May 4, school for Talawanda Dist. **$1,100,000**. CD 1/20.

▲ **O., Toledo**—SCHOOL—Adams Twp. Bd. Educ., C. L. Keyser, pres., Reynolds Rd., voted $2,200,000 bonds May 4, high school, **$1,477,000**; elementary school **$400,000** and addns. to other schools, McLaughlin & Kell, Lima, archts. CD 12/16.

O., Toledo—HIGH SCHOOL—Bd. Educ., Ottawa Hills School Dist., Indian River, defeated bonds May 4, expand and imprv. high school. **$975,000**. CD 3/26.

▲ **O., Toledo**—SCHOOLS—Bd. Educ., Washington Twp., 5700 Whitmer Dr., defeated bonds May 4, 14-room school in Monroe Acres 8-room school in Lincolnshire Area; 8-room school Rowland-Newport area, **$1,650,000**. CD 1/20.

▲ **Pa., Langhorne**—HIGH SCHOOL—Neshaminy Joint School Bd., Langhorne, plans by Haig & D'Entremont, 308 York Rd., Jenkintown, Junior High School, Janney, **$1,750,000**. Walker-Yeomans Assoc., Inc., 117 S. 17 St., Phila., consult. engr. CD 10/15.

▲ **Pa., New Kensington**—HIGH SCHOOL—New Kensington School Auth., New Kensington, plans by Hunter, Caldwell & Campbell, 3601 Fifth Ave., Altoona, 1 story, brick, steel high school. **$2,275,000**. H. L Schwartz, Alter Bldg., assoc. archt.

▲ **Pa., Valencia**—HIGH SCHOOL—Richland Twp School Dist., R.D. 1, plans by Joseph W. Hoover 333 Blvd. of Allies, Pittsburgh, brick, block Junior Senior High School, Richland Twp. **$1,300,000**.

▲ **Tex., Aldine**—SCHOOLS—Aldine Independent School Dist., Aldine, voted bonds May 1, high school, **$1,500,000**; elementary school, **$300,000**; elementary school addn., **$300,000**. CD 4/23.

▲ **Tex., Houston**—SCHOOLS—Houston Independent School Dist., 1600 Washington St., **$25,000,000** bond election July 24 for five years school program.

▲ **Va., Portsmouth**—HOUSING—Portsmouth Redevelopment & Housing Auth., 1900 Columbus Ave., plans by Williams, Coile & Blanchard, 3415 Virginia Ave., Newport News, 148 two story rein.-con., masonry public housing units, Proj. VA-1-5A. **$1,000,000**. CD 8/26/52.

COMMERCIAL BUILDINGS

▲ **Calif., Los Angeles**—DWELLINGS—Dunas, Greene & Dunas, 490 S. San Vicente Blvd., plans by L. C. Major & Assocs., 511 La Cienega Blvd., 166 frame, stucco dwellings in San Fernando Valley, **$1,500,000**.

▲ **Calif., Menlo Park**—PROFESSIONAL—Johnson & Mapes, 540 Santa Cruz Ave., professional bldg. area at A and Laurel Sts., adjoining Stanford Village and Linfield Oaks Districts, **$1,300,000**.

▲ **Conn., New Haven**—PHYSICS RESEARCH LABORATORY—Yale University, New Haven, physics research laboratory, wing to electrical engineering bldg., medical school addn., rehabilitation of Durfee Hall, chemistry laboratories, and the Sterling and central power generating plants, **$30,000,000**. CD 6/12/52.

▲ **Del., Wilmington**—APARTMENT—1800 N. Broom Corp., Att. Allen Hart, 913 Market St., plans by Aaron Colish, 117 S. 17 St., Phila., Pa., apartment, 18 and Broom Sts. **$2,000,000**.

▲ **Ill., Chicago**—APARTMENT—Wm. M. Allison, 229 Lake Shore Dr., Zone 11, plans by Phillip B. Maher, 157 E. Erie St., one 11, 22 story 80 unit and 2 penthouses air-conditioned apartment, **$2,200,000**.

▲ **La., Shreveport**—OFFICE—The Henry C. Beck Co., First National Bank Bldg., Dallas, Tex., plans by Neild & Somdal, 960 Jordan St., 20 story office, Travis and Edwards Sts. **$5,000,000**.

Mass., Brookline—HOSPITAL—Peter Bent Brigham Hospital, 721 Huntington Ave., Pearl Memorial Hospital wing for treatment of aged. **$500,000**.

▲ **Neb., Omaha**—CHURCH—First Methodist Church, 20 and Davenport Sts., plans by Harold E. Wagoner, Architects Bldg., Phila., Pa., church, 69 and Cass Sts. **$1,000,000**. CD 4/7.

▲ **N. J., Millburn**—DEPARTMENT STORE—B. Altman & Co., 5 Ave. and 34 St., New York, N. Y., 110,000 sq. ft. department store, on 14-acre tract, at Morris Turnpike and River Road, **$1,500,000**. CD 7/28/49.

▲ **N. Y., Valley Stream**—SHOPPING CENTER—Chanin Corp., 122 E. 42 St., New York, Zone 17, shopping center, to include branch of Gimbels Department Store, Sunrise Hy. **$3,000,000**.

▲ **Pa., Leetsdale**—SHOPPING CENTER—Charles A. Raimondi, 1116 Merchant St., Ambridge, plans by Walter Kleez, 311 Wilson Ave., Ambridge, brick, block, steel shopping center, **$1,000,000**.

▲ **Pa., Phila.**—APARTMENT—Shelby Constr. Co., c/o Morris Henkin, 121 S. Broad St., plans by Curtis & Davis, 822 Perdido St., New Orleans, La., 500-suite apartment, in Penn Center, **$4,000,000**.

▲ **Tex., Orange**—HOTEL-MOTEL—Orange Community Hotel Co., Orange, plans by Golemon & Rolfe, 5100 Travis St., Houston, 3 story bsmnt., 80-room hotel-motel, **$1,300,000**. Walter P. Moore, 2 Pinedale St., Houston, consult. engr. CD 2/12.

▲ **Utah, Salt Lake City**—HOSPITAL—Latter Day Saints Church, Clarence E. Wonnecott, 8th Ave. and C St., plans by Young & Hansen, 66 Canyon Rd., 6 story hospital addn. **$1,750,000**. CD 3/3/52.

▲ **Utah, Salt Lake City**—FASHION CENTER—Makoff's Ladies Apparel, c/o Samuel Makoff, 60 E. South Temple St., plans by Ashton, Evans & Brazier, 24 S. W. Temple St., L-shaped fashion center. **$1,000,000**.

▲ **Va., Norfolk**—RESIDENCES—Azalea Constr. Co., c/o Stanley Waranch, 8200 Halprin Dr., Norfolk, 350 residences, Norfolk and Princess Anne Counties. **$3,500,000**.

▲ **Wash., Seattle**—HOUSES—Guthrie Constr. Co., 10703 Renton Ave., 203 houses, **$2,500,000**.

▲ **Ont., London**—HOMES—Fellner Constr. Co., 380 Cedar Ave., 140 new homes. **$1,250,000**. CD 1/20.

▲ **Ont., London**—SHOPPING CENTER—H. C. McClure Constr. Co., RR. 2, London, shopping center and homes, sewers, roadways, water mains, etc. **$2,500,000**.

▲ **Que., Montreal**—HOME—Eventide Home, Upper Lachine Road, Montreal West, Salvation Army of Canada, 1485 Drummond St. W., plans by Sydney & C. S. Comber, 4444 Sherbrooke St. W., Montreal, Que., old people's home addn. **$1,100,000**.

INDUSTRIAL BUILDINGS

▲ **Calif., San Francisco**—BREWERY—Lucky Lager Brewing Co., 2601 Newhall St., plans by Meyers & Evers, 149 California St., brewery addns. **$1,400,000**. CD 5/10.

▲ **Ill., Chicago**—WAREHOUSE, etc.—International Salt Co., 228 N. La Salle St., 30,000 warehouse and 6,500 sq. ft. bagging plant unit and 520 ft. dock, North Branch St. and Ogden Ave. **$1,000,000**. Weir & Co., 20 N. Wacker Dr., Zone 6, consult. engrs.

▲ **Ky., Henderson**—PLANT—Spencer Chemical Co., Pittsburgh, plant addn. for mfg. of liquid ammonium nitrate and ammoniating solution, **$1,000,000**.

▲ **Ky., Louisville**—FREIGHT STATION—Louisville & Nashville R. R. Co., L. L. Adams, ch. engr., 908 W. Broadway, Zone 1, freight station, freight yards at Strawberry Station. **$10,000,000**.

▲ **Mich., Livonia**—PLANT—Fisher Body Div., General Motors Corp., General Motors Bldg., Detroit, 650,000 sq. ft. addn. to Livonia Plant, incl. mfg. space, L-shaped office, power plant, administration, cafeteria, locker dpt. add hospital, **$7,500,000**, Argonaut Realty Div., General Motors Corp., General Motors Bldg., Detroit, engrs.

▲ **N. J., Trenton**—WAREHOUSE, etc.—Louis. H. Cahan & Co., 1002 Stuyvesant Ave., Zone 8, 2 story, brick, steel warehouse, loading docks, parking space, offices, Trenton Freeway and Penn. R. R. **$2,000,000**.

▲ **N. J., Yardville**—INDUSTRIAL DEVELOPMENT—Mahoney-Troast Constr. Co., 790 Bloomfield Ave., Clifton, industrial development or park on 115-acres, **$10,000,000**.

▲ **Tex., Sugarland**—PLANT, etc.—Imperial Sugar Co., Sugarland, sugar production plant addn. **$1,500,000**; storage or warehousing, **$1,000,000**; remodeling, rehabilitation existing plant and facilities, incl. machinery repair shop, **$500,000**.

UNCLASSIFIED

▲ **Louisiana, Mississippi, Alabama**—LINE UNITS—Transcontinental Gas Pipe Line Corp., 3100 Travis St., Houston, Tex., 57 mi. 30 and 36 in. line units paralleling sections of existing main line running from Louisiana thru Mississippi and Alabama states, **$6,533,000**.

▲ **Louisiana**—PIPE LINE—Shell Pipe Line Corp., Shell Bldg., Houston, Tex., 65 mi. 12 in. products pipe line from Norco refinery west to near Baton Rouge, Norco, **$1,800,000**.

▲ **Ohio**—GAS PIPE LINE—Ohio Fuel Gas Co., 109 N. Front St., Columbus, 24.5 mi. natural gas pipe line between underground storage areas and lines serving Northwestern Ohio communities, Richland and Crawford Counties. **$1,072,000**.

▲ **OKLAHOMA**—RURAL DISTRIBUTION LINES—Choctaw Electric Co-operative, Inc., Hugo, 350 mi. electric distr. lines, headquarters facilities, 8.3 mi. 33 KV transmission line and sys. imprvs., Choctaw Co. **$1,235,000**. CD 1/22/51.

▲ **Virginia—West Virginia**—GAS SYSTEM—Shenandoah Gas. Co., Lynchburg, natural gas sys. to serve Winchetser, Va. and Martinsburg, W. Va. from Middletown, Va. **$1,553,450**.

▲ **West Virginia**—TRANSMISSION LINE—Appalachian Electric Power Co., 40 Franklin Rd., Roanoke, Va., add. second circuit to existing 330 kv. Sporn-Kanawha transmission line, three 1,414,000 CM 1.75 in. diam. expanded A.C.S.R. Conductors, **$1,182,000**. American Gas & Elec. Service Corp., 30 Church St., New York, N. Y., engrs.

▲ **Ont., Port Credit**—HARBOUR DEVELOPMENT—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., harbour development, incl. 3 wharves, breakwater, channel and approach, slip for deep draught harbor, **$3,653,000**. A. A. Anderson, c/o owner, engr. CD 6/30/52.

Bridge appropriation dollars go further when you design for reinforced concrete. And, this flexible medium permits imaginative and beautiful designs which cannot be achieved with any other type of construction.

Structures built of reinforced concrete are durable, too . . . resistant to wind, shock, vibration, and quakes. Furthermore, the necessary construction materials and labor are readily available from local sources.

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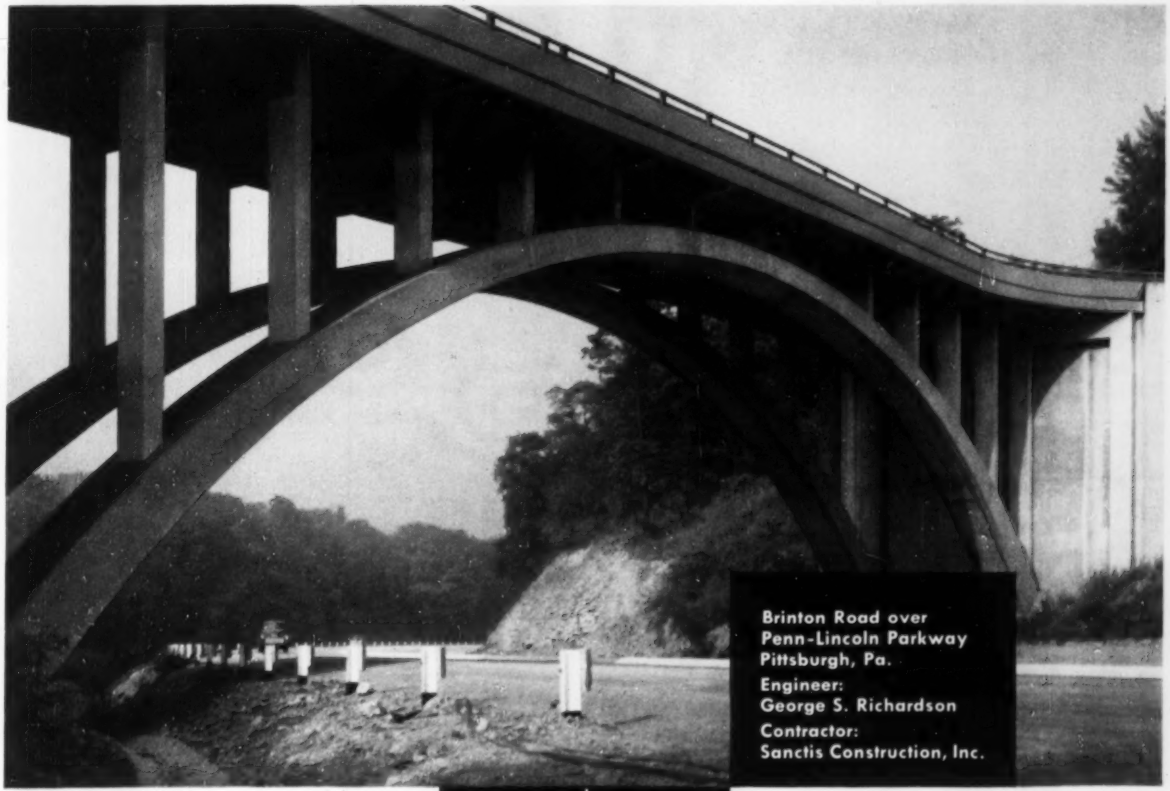
build with REINFORCED CONCRETE



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Pittsburgh, Pa.
Engineer:
George S. Richardson
Contractor:
Sanctis Construction, Inc.

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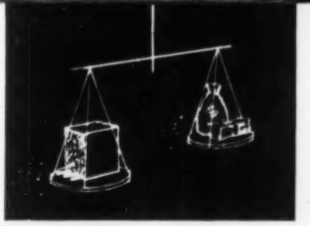

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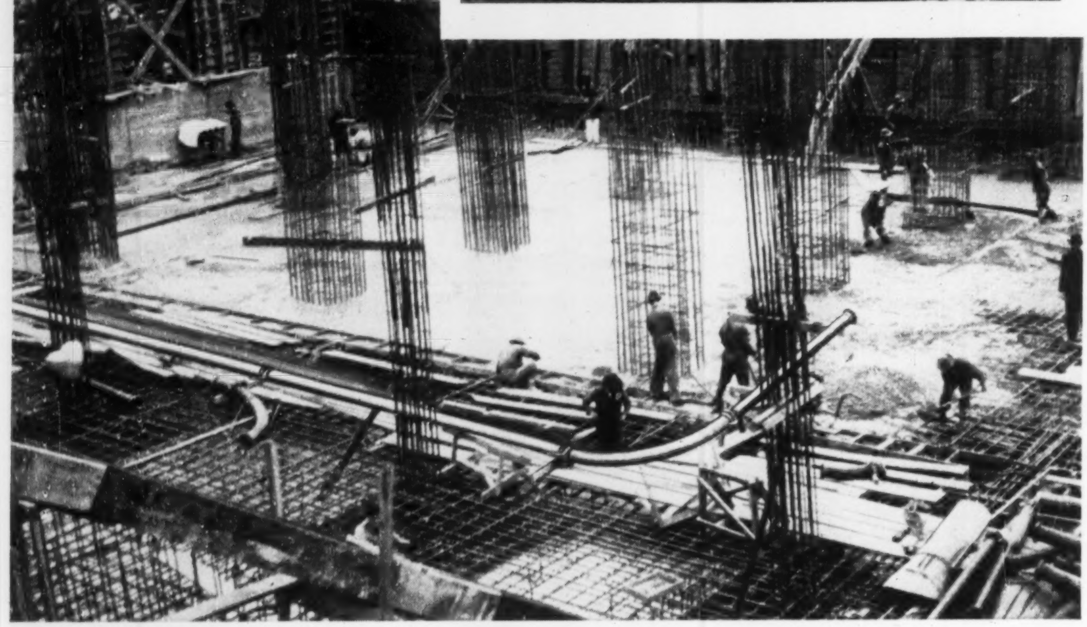
Pan American Airways Builds Bogota Hotel...

Recently opened Hotel Tequendaura in Colombia's capital city of Bogota is the newest of Pan Am's chain of Latin American hotels. It's managed by their hotel-operating subsidiary, International Hotel Corp.

Designed by Chicago Architect...

Holabird, Root and Burgee of Chicago, internationally known architects, designed this impressive 17-story hotel.



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Rex Pumpcrete was used to place all the concrete for the structure... 14,400 cubic yards for foundations, supporting beams, columns and floors for this seventeen-story, $7,500,000 hotel, one of the most modern in Latin America. Two Model 160 Pumpcretes were used, sharing the pumping job for the first 10 floors... a height of 110 feet.

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 1 Massachusetts June 16 Rhode Island

STREETS AND ROADS

June 1 Massachusetts

▲† **Mass., Chicopee Falls**—HOSPITAL, etc.—B.A. On Or About 6/18—U. S. Eng., 857 Commonwealth Ave., Boston, 100-bed hospital, with boiler house and dental clinic, Westover Air Force Base, ENG-19-016-54-1. $2,000,000-$2,750,000. Cram & Ferguson, 248 Boylston St., Boston, archts. CD 12/30/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Raymond Concrete Pile Co.**, 31 St. James Ave., Boston, Mass., LB **$3,332,295**, fleet berthing facilities, Coddington Cove, NOY 73788, Spec. 34829, NEWPORT, R. I. Dpt. Navy, First Naval Dist., 495 Summer St., Boston, Mass. Bids May 18. CD 4/29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Vappi & Co., Inc.**, 240 Sidney St., Cambridge, Mass. CA **$3,000,000**. New England INDUSTRIAL CENTER, NEEDHAM, MASS. Cabot, Cabot & Forbes, Inc., 60 State St., Boston, Mass. Burton & Vappi, Cambridge, Mass., engrs. Farrington Mfg. Co., 76 Atherton St., Jamaica Plain, Mass., lessee.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 10 New York

STREETS AND ROADS

June 1, 3 Maryland June 2 Delaware

June 8 New Jersey June 10 New York

June 11 Pennsylvania

▲ **NEW JERSEY**—B.A. 6-22—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

Hudson County—Contract No. N-9, superstructure steelwork for viaduct in Newark, to form part of its Newark Bay-Hudson Co. Extension. CD 8/20, under Streets and Roads.

BIDS ASKED—BUILDINGS

▲ **N. Y., Valley Stream**—SCHOOLS—B.A. 6/22—Central High School Bd., Fletcher Ave., Junior-Senior High School, Hungry Harbor Rd., south of Sunrise Hy. $2,300,000; Junior-Senior High School, Herman Blvd. north of Southern State Pkway, $2,300,000.

SOON LETS CONTRACT—BUILDINGS

▲ **Pa., Pittsburgh**—SCHOOL OF MEDICINE—University of Pittsburgh, Forbes St., soon lets contract substructure only for 4 to 10 story brick, steel School of Medicine, Nursing Dentistry & Pharmacy. $15,000,000. Schmidt, Garden & Erikson, 104 S. Michigan St., Chicago, Ill., archts. CD 1/28.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Corbetta Constr. Co., Inc., 220 E. 42 St., New York 17, N. Y., CA **$4,266,435**, est. $4,527,000, 1.21 mi. Major Deegan Expressway, Contr. No. 2, FAMDE 54-1, Bronx Co.;

The Lane Constr. Corp., 37 Colony St., Meriden, Conn. CA **$2,938,988**, est. $3,604,000, 1.533 acc., 7.19 mi. Hy. Springfield-East Springfield, SH 8047, East Springfield-Cherry Valley, SH 934, Cherry Valley-Sharon Springs, Sharon Springs, Canajoharie Pt. 1, SH 8064, FARC 54-59, Otsego Co.;

Madison Co. Constr. Co., Inc., Madison, N. Y., CA **$868,660**, est. $967,000, 8.04 mi. Roseboom-Janesville Pt. 1, FASSH 54-4, Otsego Co.;

Serafini Constr. Co., Inc. & Binghamton Constr. Co., Inc., Conklin Rd., Binghamton, N. Y., CA **$675,535**, est. $692,000, 0.67 mi. Acc., 1.14 mi. Hy., Johnson City; Floral Ave., Johnson City, Rte. 17, Conn., FASH 52-2, Riverside Dr.; SH 444, Riverside Dr.-Binghamton, SH 5377, FASH 57-7, FASH 54-8P, FARC 54-52, Broome Co.;

Tully & DiNapoli, Inc., 12750 Northern Blvd., Corona, N. Y., CA **$1,131,578**, est. $1,233,000, 1.51 mi. Peninsula Blvd. Contr. 5, South St. Parkway Interchange, Southern State Parkway, FASS 54-6, SSP-54-1, Nassau Co.;

Brunner Asphalt & Constr., Inc., 237 Kingston Ave., Buffalo, N. Y., CA **$682,524**, est. $830,000, 6.3 mi. Southwestern Blvd., SH 9269, FARC. 54050, Erie Co.;

Berlanti Constr. Co., Inc., 15 Oakland Ave., Harrison, N. Y., CA **$2,988,871**, est. $3,759,000, 2.7 mi. Palisades Interstate Parkway (Sec. 2) State Line-Orangeburg, SH 728 PIP 54-1, RC 54-51, Rockland Co.;

Louis Mayersohn, 36 State St., Albany, N. Y., CA **$987,096**, est. $1,235,000, 6.64 mi. Kelsey Corners-Oakville, FASSH, 54-6, Otsego Co. Grand total $14,539,687. Bids Apr. 22. CD 4/26, under LB.

▲ **Grove, Shepherd, Wilson & Kruge, Inc.**, 274 Park Ave., New York 17, N. Y., LB, **$5,252,800**, general constr.;

W. E. Blume, Inc., 308 Putnam Ave., Brooklyn 16, N. Y. LB, **$401,600**, electrical work;

Mechanical Installations, Inc., 24-16 Bridge Plaza South, Long Island City, N. Y., LB, **$183,700**, heating and ventilating;

S. & M. Plumbing Co., Inc., 601 W. 26 St., New York 1, N. Y., LB, **$173,000** plumbing for E. 73 St. Incinerator, Manhattan Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids May 19.

▲ **NEW JERSEY**—New Jersey Hy. Auth., 1035 Parkway Ave., Trenton,

Franklin Contg. Co., 12 Central Ave., Newark, N. J., CA, **$3,252,027**, Alternate B, grading, paving, drainage and bridges for 1.5 mi. section of Garden State Parkway from Passaic River to point 280 ft. south of Erie R. R. Contract 54, East Paterson, Bergen Co. Bids Apr. 26, awarded May 10. CD 5/6, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Samuel Match**, c/o Dworman Co., 215 Montague St., Brooklyn 2, N. Y. Owner Builds. **$2,400,000**. two 120-family APARTMENTS, 2717-27 and 2727-41 E. 28 St. BROOKLYN, N. Y. CD 5/13/53.

▲ **Woodedge at Huntington Homes**, c/o Sterling M. Palm, archt., 110-01 63 Dr., Forest Hills, N. Y. Owner builds, **$3,500,000**. 350 HOUSES, Deer Park Ave., south of Northern State Parkway, HUNTINGTON, N. Y.

▲ **Post Homes**, c/o Trylon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$2,000,000**. 100 HOUSES, tract on Jericho Turnpike opposite Bostwick Polo Field, WESTBURY, N. Y.

▲ **Rust Engr. Co.**, 575 Sixth Ave., Pittsburgh, Pa., CA **$3,500,000**. design and construct, bleach and pulping PLANT, ERIE, PA. Hammermill Paper Co., 1442 East Lake Rd., Erie, Pa.

▲ **Hegeman-Harris Co., Inc.**, 30 Rockefeller Plaza, New York 20, N. Y., CA, **$4,500,000**, medical OFFICE BLDG. CA, **$3,500,000**, 21-unit APARTMENT BLDG., 24, G and H Sts., bounded by Virginia Ave. and New Hampshire St. N. W., WASH., D. C. Potomac Plaza Development Corp., c/o contractor. Chester L. Churchill, 17 East 49 St., New York, Zone 17, N. Y., consult. archt. Harrison & Abramovitz, 630 Park Ave., New York 21, N. Y., archts.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 30 Louisiana

STREETS AND ROADS

June 16 Louisiana

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Daniel Constr. Co.**, P.O. Box 2286, Clemson, S. C. CA **$2,960,000**, FOOD INDUSTRY bldg., CLEMSON, S. C. Clemson College, Clemson, S. C. Bids Mar. 23. CD 4/15, under LB.

▲ **Gust K. Newberg Constr. Co.**, 99 N. E. 71 St., Miami, Fla., CA, **$2,127,000**, HOSPITAL, FORT LAUDERDALE, FLA. Diocese of St. Augustine, St. Augustine, Fla. Bids Apr. 12. CD 5/3, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 8 Wisconsin

STREETS AND ROADS

June 8 Wisconsin

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **E. R. Farley Constr. Co.**, 1248 Farley Dr., Indianapolis, Ind. Owner Builds. **$3,500,000**, 240 HOMES in new addition, INDIANAPOLIS, IND.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 1 Iowa June 3 Kansas

June 15 Texas

STREETS AND ROADS

June 1 Iowa June 3 Kansas

June 15, 16 Texas

▲† **Tex., Lackland Air Force Base**—HOSPITAL—B.A. 6/24—U. S. Eng., Box 1229, Galveston, 9 story, 325,000 sq. ft. 500-1,000 bed hospital, incl. 32,000 sq. yd. paved service roads and parking areas, boiler house, $5,000,000; water sys., $50,000; sanitary sewers, $70,000; storm sewers, $65,000; constr. and paving roads, streets, areas, $85,000; natural gas distr. sys., $60,000; area electric lighting, $62,500; bldg. area earthwork, grading, $55,000. CD 5/19.

BIDS ASKED—BUILDINGS

▲ **Tex., Port Arthur**—PLATFORMING UNIT, etc.—Bids Asked—The Texas Co., Port Arthur, another platforming unit, $17,500,000; addnl. steel tankage storage, $250,000; 7,500 kw electric turbo-generator unit, $1,250,000. CD 5/18.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **John P. Abramson Constr. Co.**, 720 Savings & Loan Bldg., Des Moines, Ia., LB, **$97,616**, Contract No. 1, earthwork;

McCarthy Imprvt. Co., 602 Kahl Bldg., Davenport, Ia., LB, **$1,222,204**, Contract 2, substructure; LB, **$181,167**, Contract No. 7, Illinois Approach Overpasses;

Allied Structural Steel Companies, Clinton, Ia., LB, **$2,684,848**, Contract No. 3, superstructure;

Central Eng. Co., 2531 Rockingham Rd., Davenport, Ia., LB, **$236,011**, Contract No. 4, approach roadway paving;

Ringland-Johnson Constr. Co., Clinton, Ia., LB, **$66,466**, Contract 5, administration bldgs. for two-lane highway bridge and approaches over Mississippi River between city of Clinton, Ia. and East Clinton, Ill., IOWA and ILLINOIS, City of Clinton Bridge Comn., P. O. Box 70, Clinton, Ia. Bids May 6. CD 3/23, under Ia., Clinton.

▲† **Peter Kiewit Sons Co.**, 1024 Omaha Natl. Bank Bldg., Omaha, Neb., LB, **$3,007,050** Base Bid; LB, **$3,058,020** with enlarged fill for airfield grading, paving, Offutt Air Force Base, Inv. 25-066-54-60, FORT CROOK, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids May 18. CD 4/7.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Fruin-Colnon Contg. Co.**, 1706 Olive St., St. Louis 3, Mo. CA **$3,008,022**. 4 story, bsmnt., 218x244 ft. stone, brick, rein.-con. DEPARTMENT STORE and SHOPPNG CENTER, Clayton Rd. and Brentwood Blvd., RICHMOND HEIGHTS (ST. LOUIS 17 P. O.), MO. Stix, Baer & Fuller Co., Arthur B. Baer, pres., Washington Ave., St. Louis 1, Mo. CD 4/20, under LB.

▲ **G. L. Tarlton Contg. Co.**, 5505 Dale Ave., St. Louis 10, Mo. CA general contract;

Corrigan Co., 2525 St. Louis Ave., St. Louis 6, Mo. plumbing, heating and air-conditioning contracts;

S. C. Sachs Co., Inc., 5540 W. Park Ave., St. Louis 10, Mo. electrical work;

Otis Elevator Co., 2301 Locust St., St. Louis 3, Mo. elevators from 1 story, ground floor to 6 story, ground floor brick, concrete, steel addns. to front and rear of present HOSPITAL, ST. LOUIS, MO. Total est. **$4,000,000**, Jewish Hospital of St. Louis, 216 S. Kingshighway Blvd., St. Louis, Mo. Bids Mar. 16. CD 2/24.

▲ **Allied Constr. Co., Inc.**, 911 St. Joseph St., Dallas, Tex., CA Approx. **$2,503,000**, 300-unit MILITARY HOUSING for U. S. Govt. Contg. & Purch. Office, Perrin Air Force Base, SHERMAN, TEX. Perrin Housing, Inc., c/o Decker-Frank-Hexter (Sponsor), 911 St. Josephs St., Dallas, Tex. Bids Apr. 20. CD 4/26, under LB.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

June 9 California

STREETS AND ROADS

June 9, 10 California

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Jensen Constr. Co.**, 548 W. 2nd North St., Salt Lake City, Utah, LB **$1,777,640**, STUDENT UNION BLDG., University of Utah, SALT LAKE CITY, UTAH. State Building Bd., State Capitol, Salt Lake City, Utah. Bids May 11. CD 4/29.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

May 31 British Columbia

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Lowren Constr. Co. Ltd.**, Farnam Dr., Ottawa, Ont., CA, **$2,776,400**, 316-unit HOUSING, Overbrook Area, OTTAWA, ONT. Ottawa Lowren Housing Ltd., Echo Drive, Ottawa, Ont. Bids Apr. 12. CD 4/7.

ALASKA

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **S. Patti Constr. Co., Inc. & MacDonald Constr. Co.**, 1340 Admiral Blvd., Kansas City, Mo., CA **$3,987,052**, est $3,548,386, 15 story, rein.-con. family HOUSING and C.B.Q. BLDGS., ENG-95-507-54-43, WHITTIER, ALASKA. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids May 11. CD 5/14, under LB.

(Proposal Advertisements see pp. 78 to 81)

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UNIT PRICES

Competition tough for Ga. sewer & water contracts

Twenty-seven contractors bid on water and sewer extensions for Quitman, Georgia, population 5,000. The job was offered in three divisions: 2,300 linear ft of water mains; 27,489 ft of sewer lines; and a primary treatment sewage plant. John J. Harte Co., Atlanta, is consulting engineer.

Sasser-Beale of Albany, Georgia, got a $112,434 contract for the first two divisions with a low bid of $6,029 for water mains, and $106,405 for sewer lines and sewer lift station. The J. B. McCrary Co., Atlanta, got the $74,230 treatment plant at 7% under the second low bid.

Water and sewer lines must be completed in 240 days, the plant in 250.

Prevailing wage scales in Quitman allows $1.25 per hr for skilled labor.

Bidders include:

Division I—Water mains

1C	Sasser-Beale, Albany, Ga	$6,029
2	J. B. McCrary Eng. Co., Atlanta, Ga	6,137
19	Dixie Const. Co. of Ga. & Robert E. Lee Co., Savannah, Ga	8,829

Bids: 2-4-54		Quan-	Unit Prices	
Item	Unit	tity	1 C	2
6″ CI pipe	lf	2,300	$2.25	$2.34
6″ fire hydrants	ea	3	130.00	118.50
6″ valves & boxes	ea	3	65.00	54.75
CI fittings	lb	940	0.17	0.15
Tie to exist 10″ main	ea	1	50.00	35.00
Tie to exist 6″ main	ea	2	30.00	30.00

Division II—Sewer lines

1	Sasser-Beale, Albany, Ga	$126,738
2	Arthur Pew & E. N. Murray Const. Cos., Atlanta, Ga	132,665
16	W. P. Rose Const. Co., Atlanta, Ga	226,083

Item	Unit	Quantity	1	2
15″ VC sewer pipe:				
0-4 cut	lf	100	$2.55	$3.35
4-6	lf	972	2.90	3.50
6-8	lf	730	3.60	4.00
8-10	lf	540	4.15	4.50
10-12	lf	640	4.90	5.50
12-14	lf	340	5.90	6.25
12″ VC sewer pipe:				
0-4	lf	1,510	1.80	2.40
4-6	lf	1,600	2.10	2.50
6-8	lf	510	2.50	3.00
8-10	lf	520	3.25	3.25
10-12	lf	660	4.20	4.50
12-14	lf	950	5.20	5.00
14-16	lf	850	6.20	6.00
16-18	lf	190	7.50	6.50
18-20	lf	140	8.50	8.00
20-22	lf	480	10.00	10.00
22-24	lf	460	12.00	12.00
24-26	lf	330	14.00	15.00
26-28	lf	400	18.00	17.50
10″ VC sewer pipe:				
0-4 cut	lf	1,530	1.50	1.80
4-6	lf	2,915	1.80	1.85
6-8	lf	1,430	2.40	2.00
8-10	lf	1,030	2.90	3.00
10-12	lf	820	3.90	3.50
12-14	lf	210	4.90	4.50
14-16	lf	140	6.00	5.00
8″ VC sewer pipe				
0-4 cut	lf	1,699	1.35	1.50
4-6	lf	1,705	1.55	1.65
6-8	lf	640	1.95	1.75
8-10	lf	580	2.70	1.90
10-12	lf	640	3.25	2.00
12-14	lf	500	3.70	3.00
14-16	lf	740	4.50	4.50
16-18	lf	720	6.00	5.50
18-20	lf	260	8.00	6.00
Manholes:				
0-4 cut	ea	16	115.00	150.00
4-6	ea	22	135.00	175.00
6-8	ea	11	155.00	200.00
8-10	ea	9	195.00	260.00
10-12	ea	9	235.00	308.00
12-14	ea	7	305.00	375.00
14-16	ea	5	345.00	425.00
16-18	ea	3	425.00	500.00
18-20	ea	1	495.00	575.00
20-22	ea	3	$545.00	$625.00
22-24	ea	2	600.00	700.00
24-26	ea	1	700.00	800.00
26-28	ea	1	800.00	1,000
Wye, 15″ x 6″	ea	1	7.00	7.00
12″ x 6″	ea	5	3.50	3.50
10″ x 6″	ea	35	3.00	3.00
8″ x 6″	ea	50	2.50	2.00
6″ 1/8 bend	ea	90	1.50	0.85
6″ VC service line	ea	3,000	1.10	1.30
14″ CI pipe	lf	100	6.50	6.50
12″ CI pipe	lf	80	6.00	5.25
10″ CI pipe	lf	40	5.00	4.30
Concrete piers	cy	5	40.00	50.00
Pvmt. cut & replace	lf	300	2.50	2.00
Drop manholes	vf	5	20.00	15.00

Division II—Alternate sewer lines

1C	Sasser-Beale, Albany, Ga	$106,405
2	C. N. Mason, Pensacola, Fla	112,232
16	Bumby & Stimpson Inc., Orlando, Fla	178,126

Item	Unit	Quantity	1 C	2
15″ VC sewer pipe:				
0-4 cut	lf	100	$2.55	$3.31
4-6	lf	972	2.90	3.35
6-8	lf	730	3.60	3.50
8-10	lf	540	4.15	3.85
10-12	lf	640	4.80	4.55
12-14	lf	340	5.80	7.45
12″ VC sewer line:				
0-4 cut	lf	1,510	1.80	2.53
4-6	lf	1,600	2.10	2.55
6-8	lf	790	2.50	2.80
8-10	lf	510	3.25	3.30
10-12	lf	50	4.20	3.95
12-14	lf	180	5.20	4.92
14-16	lf	360	6.20	5.60
16-18	lf	50	7.50	7.60
10″ VC sewer pipe				
0-4 cut	lf	1,500	1.50	1.54
4-6	lf	3,385	1.80	1.55
6-8	lf	2,738	2.40	1.75
8-10	lf	1,000	2.90	2.00
10-12	lf	730	3.90	2.50
12-14	lf	120	4.90	3.56
14-16	lf	20	6.00	4.75
8″ VC sewer pipe:				
0-4 cut	lf	1,699	1.35	1.31
4-6	lf	1,705	1.55	1.35
6-8	lf	648	1.95	1.65
8-10	lf	580	2.70	1.95
10-12	lf	640	3.25	2.45
12-14	lf	500	3.70	3.50
14-16	lf	740	4.50	4.55
16-18	lf	720	6.00	5.75
18-20	lf	260	8.00	8.00
Manholes:				
0-4 cut	ea	15	115.00	120.00
4-6	ea	24	135.00	140.00
6-8	ea	14	155.00	160.00
8-10	ea	9	195.00	200.00
10-12	ea	7	235.00	240.00
12-14	ea	4	305.00	350.00
14-16	ea	4	345.00	400.00
16-18	ea	3	425.00	450.00
18-20	ea	1	495.00	500.00
20-22	ea	1	545.00	550.00
Wye, 15″ x 6″	ea	1	7.00	9.20
12″ x 6″	ea	5	3.50	5.50
10″ x 6″	ea	35	3.00	4.00
8″ x 6″	ea	50	2.50	3.00
6″ 1/8 bends	ea	90	1.50	1.00
VC service line, 6″	lf	3,000	1.10	1.35
CI pipe, 14″	lf	100	6.50	9.75
12″	lf	80	6.00	9.00
10″	lf	40	5.00	8.00
Concrete piers	cy	5	40.00	85.00
Pvmt cut & replaced	lf	300	2.50	2.00
Lift sta compl	ls	1	10,500	17,300
Headwall (12″ flap valve & shear gate)	ls	1	350.00	400.00
VC sew line overflow, 10″	lf	30	2.00	2.00
CI force main, 6″	lf	2,150	2.20	2.45
Drop manholes	vf	5	20.00	50.00

Division III—Sewage treatment plant

1C	J. B. McCrary Eng. Corp., Atlanta, Ga	$74,230
2	Crossin Cont. Co., Houston, Tex.	80,164
21	E. K. Aldridge & Sons, Athens, Ga	109,734

	1 C	2
Total bid	$74,230	$80,164
% of total for	%	%
Bar screen chamber	0.44	0.50
Primary set tank, compl	29.57	23.77
Digester tank, no cover	22.57	19.48
Sludge drying beds	9.00	16.01
Control house & equip, compl	6.20	6.02
Piping, fittings, etc, in plant area	6.06	8.64
Manholes, 6	0.91	1.23
15″ VC outfall line, 654 lf	3.08	3.67
Headwall	0.24	0.31
2″ water main to plant, 1,899 lf	2.56	2.94
Digester cover compl	18.19	15.83
Gas burner, piping & burner housing	1.20	1.60

K&M

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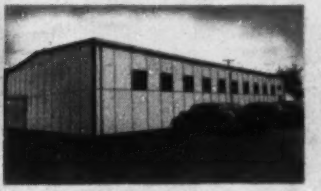
Your K&M distributor will gladly give you further details on versatile "Century" APAC sheets. Contact him soon, or write to us direct.



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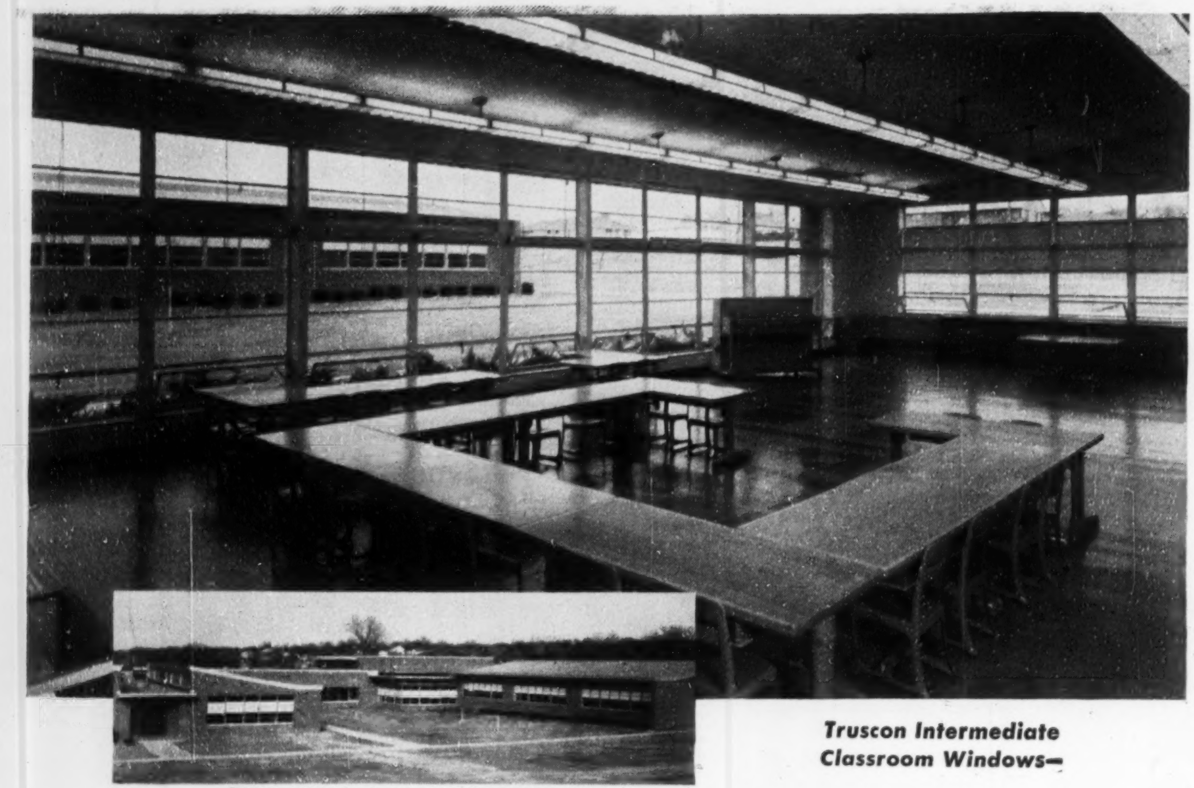
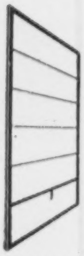


Truscon Intermediate Classroom Windows—

Western Hills Grade School, Omaha, Nebraska
Noel S. Wallace, *Architect.* Shelton and Sons, *Contractor.*

Light, Bright, Weathertight in New Omaha School



Many generations of students at Western Hills Grade School in Omaha are going to enjoy superior light and ventilation. Architect Noel S. Wallace specified Truscon Intermediate Classroom Windows throughout the well-daylighted building.

All types of Truscon Intermediate Steel Windows are products of the highest quality materials and workmanship. Specially rolled solid steel sections, substantial in weight and original in design, provide advantageous weathering and attractive appearance. Truscon Classroom Windows are fabricated to these same exacting specifications, Bonderized and painted. You can use them with complete confidence in your choice.

Upper lights may be glazed with one of several types of light-diffusing, glare-reducing, or heat-absorbing glass. Provision may be made for double-insulating glass up to 1" thick.

Classroom Windows are but one of the many types of Truscon Steel Windows currently being specified for school construction. Others are: Double-Hung Steel Windows with or without sill vents; Intermediate Projected Windows; Intermediate Combination Windows; Maxim-Air® Steel Windows; Donovan Awning and Truaire® Windows; Architectural Projected Windows. Ask your Truscon representative or see Sweet's File for more information or ideas.

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BUSINESS AND FINANCE

Senate renews public housing and tightens loan insurance

Public housing came back with a bang in the first official action of the Senate Banking Committee on the 1954 housing bill.

A heavy majority of the Republicans on the committee joined the Democratic members in voting to re-authorize the full public housing program of 810,000 dwelling units originally sanctioned in the 1949 housing law (the Taft-Ellender-Wagner Act).

It seems a foregone conclusion that the Senate will sustain this action of the committee. In that event, Eisenhower will have legislative clearance to go after the 140,000 units in four years that he has recommended. House leaders had talked him out of a public housing authorization in the Administration's omnibus housing bill as presented to Congress. And there was no mention of public housing in the House version of the bill, passed before the Apr. 12 upflaring of the so-called housing scandals.

There is legal sanction, it seems evident, for the claim of congressional leaders that the Public Housing Administration could go ahead in fiscal 1955 with 33,000 to 35,000 new public housing units for which local housing authorities already have contracts with the federal agency. That claim has been made since the House struck out of the appropriation bill which includes PHA any lower limitation on the number of new units that could be started.

But, without additional authorization such as the Senate Banking Committee has voted, the program would stop dead at that point. A clause in the appropriation bill passed last year would otherwise prevent PHA from entering into any more contracts with local public housing authorities.

• Green light for redevelopment—Another House action, which seriously would cripple local redevelopment projects, likewise has been rejected by the Senate. In passing its version of this year's appropriation bill (for Independent Offices), the Senate knocked out a proviso that no federal grant could be made for a project "where incidental uses are not restricted to those normally essential for residential uses." This provision would have jeopardized 82 redevelopment projects now slated to receive federal aid under the 1949 law (ENR April 29, p. 26). Congress is expected to agree on the Senate's decision.

The Senate Banking Committee halted its own housing investigation in order to get on with the more important job of rewriting the House-passed version of the 1954 housing bill. Nobody in Congress—Republican or Democrat—wants to block enactment at this session of a new housing law. The Senate Banking Committee is trying to write amendments that will prevent irregularities and abuses of the kind that first hit headlines Apr. 12.

• Certified cost—Already, the group has agreed to language that will require builder certification of actual costs on all apartment and cooperative projects—seeking to prevent the builder from getting any more money under the insured loan than the permissible percentage.

This kind of protective clause is counted on to eliminate exorbitant profits such as some builders are alleged to have pocketed under defunct Section 608 of the National Housing Act. The House refused to adopt such a requirement before Apr. 12, but is ready to accept corrective language.

In a related action, the Senate committee restrictions for home improvement loans designed to protect householders against fleecing by "suede-shoe" salesmen and unscrupulous dealer contractors. The committee also decided to hold improvement loans to the present $2,500 maximum and three-year term, instead of increasing to $3,000 and five years, as proposed in the House-passed bill.

Further, on home improvement loans, the committee agreed: (1) To put 15% of the risk on the lender, lowering the insurance to 85% of the loan instead of the present 100%; (2) limit lending to institutions approved by FHA; (3) forbid borrowers from getting more than one home-repair loan at a time; (4) eliminate luxury items like swimming pools and barbecue pits.

Structural steel prices cut sharply on bridge bids

The price competition offered by prestressed concrete in bridge work (ENR March 18, p. 48) has led to sharp price cuts in steel bids in at least one instance recently.

Last month, tenders for a bridge across the Trinity River, in Chambers County, Tex., showed bids on Steel I beams about 5 cents per lb lower than normal for similar work. The price cuts had the effect of bringing all of the eight bidders, who proposed a structural steel design for the bridge, below the single proposal of a prestressed concrete design.

The low bidder quoted steel I beams in place at 11 cents per lb, and all steel bids ranged from 10.6 cents to 12.1 cents. This suggests that steel mills were eager enough for the business to cut quotations to bidders.

The lowest bid involving a structural steel design was $1,667,900, and the highest was $1,943,500. One of the bidders also proposed a prestressed concrete design at $2,007,700.

May to set record

Contract volume reaches record high for month

The upturn in contract awards—reported to ENR and the Construction Daily—which got under way in later March now is rolling along in high gear. Heavy construction contracts will set an all-time high for May—with plenty to spare. Contract awards in the first three weeks of this month have averaged $390 million. That's 35% more than the weekly average in April and 44% above May 1953.

All major types of private work are going strong. Mass housing contracts and commercial building had been doing well before. But during the first three weeks of May industrial building, which first showed signs of life last month, averaged nearly double the weekly average in April. Private mass housing will set a record high for any month, (again on the basis of average weekly awards). Commercial building continues to move along. Total volume for the first 20 weeks is up 24% over the previous high set in 1953.

In the public field, nonresidential buildings are on the upgrade after hitting a slump in April. Highway and bridge construction is close to the April level, while awards are above last month in waterworks and sewerage, and in earthwork and drainage.

Federal work is showing more strength this month. State and municipal awards are going at a steady pace.

(B & F continued on page 74)

Money: still easy

Connecticut sells bonds; other big issues coming

The latest in the long parade of successful turnpike issues came to market earlier this month. A national syndicate of 250 investment banking firms bought the $100-million Connecticut Expressway bonds at a net interest cost to the state of 2.86%.

This issue differed from other recent toll-road offerings in that the bonds are secured not only by tolls and concession revenues, but by the state gasoline tax. Also, the bonds will come due serially, starting in 1962, instead of maturing at the end of, say, a 40-year period.

Connecticut expects to sell $289 million more bonds before the expressway is completed. It will run 129 mi, from Greenwich near the New York State line paralleling the coast to New London and then northeast to the Rhode Island line.

• **Thruway issue coming**—The municipal bond market is waiting for the next big issue—between $300 million and $350 million of revenue bonds to be sold by the New York State Thruway Authority on June 15.

A week before that, Kentucky expects to sell about $39 million of turnpike revenue bonds for its first toll road. And the New Jersey Highway Authority plans to build a $25-million extension of the Garden State Parkway to join the New York Thruway.

• **The Outlook is bullish**—Most Wall Streeters are optimistic about future financings. They expect that interest rates will continue easy, on both bonds and mortgages. They point out that the supply of new funds available for investment by savings and loan associations, savings banks, life insurance companies, pension funds, and other investors has continued to be very high, despite the business slowdown.

At the same time, bond-market demand for funds by corporations has dropped so far this year, making new corporate and municipal issues that much easier to sell. Moody's Investors Service, for instance, estimates that volume of internal funds made available to corporations through depreciation and amortization provisions should be about $13 billion this year, compared with $12 billion in 1953. Last year, says Moody's, such funds supplied more than one-third of the new money used by corporations for capital spending and working capital.

1952-1953 trend in state construction spending—by regions

	New England	Middle Atlantic	South	Middle West	West of Mississippi	Far West	All states
Total revenue	+ 4%	+10%	+ 7%	+11%	+ 6%	+ 8%	+ 8%
Capital outlay							
Total const.	**+22**	**−17**	**+ 2**	**+22**	**+10**	**+35**	**+ 6**
Contract const.	+22	−18	+10	+21	+ 7	+35	+ 7
Total capital outlay	+25	−13	+ 1	+23	+10	+25	+ 7
Education	+71	+68	−21	−16	−21	+56	+ 1
Regular highways	+26	+12	+ 2	+36	+21	+33	+19
Toll highways	−31	−51	+82	+152	+25	−78	−37
Health & hospitals	+36	−20	− 4	+10	−29	−10	− 9

Types of construction spending as percent of capital outlay

	New England		Middle Atlantic		South		Middle West		West of Mississippi		Far West		All states	
	1953 %	**1952 %**	**1953 %**	**1952 %**	**1953 %**	**1952 %**	**1953 %**	**1952 %**	**1953 %**	**1952 %**	**1953 %**	**1952 %**	**1953 %**	**1952 %**
Education	7	5	8	4	11	14	11	16	11	16	14	11	11	11
Regular highways	67	67	56	43	71	70	70	63	77	70	68	64	68	61
Toll highways	0.3	0.5	18	32	5	3	2	1	3	3	1	4	6	10
Health & hospitals	12	11	12	13	5	6	11	12	4	6	6	8	8	9
Total construction	**89**	**91**	**86**	**91**	**89**	**88**	**86**	**87**	**91**	**91**	**80**	**74**	**87**	**87**

Trend of state construction spending

In the Census Bureau's annual summary of state government finances, just published for 1953, construction men can find a lot of statistics of interest to them.

For one thing, state revenues were up in every region of the U. S. in 1953 as compared with 1952 (top table). And state government spending for construction was up, too, in every region except New England. Increases in contract work ranged from 7% for the West of the Mississippi area to 35% for the Far West. For all regions, however, contract construction spending gained only 7% above 1952, while state revenues were up 8%.

The same table also shows how 1953 construction spending in major categories compared with the previous year. Spending for educational facilities was up only 11% for the entire country, although there were very wide variations among the different regions. Spending by state governments for regular highways was up in every region, but spending for toll highways dropped sharply in three regions during 1953. Most regions also cut back spending for state hospitals.

• **Capital outlay ratio**—When construction spending is considered as a percentage of total capital outlay (lower table), the West of the Mississippi region shows up best. In 1953, as in 1952, 91% of total capital spending went into construction. All other regions ranked quite closely behind this ratio, except the Far Western states, which put 74% of capital spending into construction in 1952, 80% in 1953.

The national ratio of construction spending to total capital spending remained at 87% in 1953—the same as in 1952. But the Middle Atlantic region cut back from 91% in 1952 to 86% in 1953. And the New England states cut back from 91% to 89%.

California contractor guilty in Title I home repair fraud

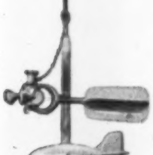
An Oakland, Calif., home repair contractor was found guilty last week of making false statements to the Federal Housing Administration in Title I loan applications.

In San Francisco, Federal District Judge Louis E. Goodman found Nathaniel Deshong, 56, former owner of the Sta-Tex Co. of Oakland, guilty on five counts. The charges carry a maximum sentence of 16 years imprisonment and a $35,000 fine. Sentencing has been put over until June 2.

Deshong was charged with stating

(*Continued on page 76*)

Gurley current meters now available in fresh or salt water models



Gurley, maker of fine current meters for federal, state and municipal bureaus for 70 years, now supplies its Price Pattern Current Meter in either fresh or salt water models. Gurley's Price Pattern instruments, designed by W. G. Price of the U. S. Geological Survey, are in use around the world.

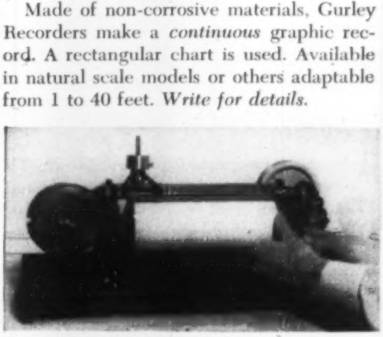
The Gurley Current Meters are available in a variety of outfits for use by overhead-cable suspension...wading-rod suspension...exploration and survey parties. Gurley also makes the Pygmy for shallow streams, flumes and canals.

The salt water model incorporates a commutator which indicates each tenth revolution of the bucket wheel. Sealed commutator box excludes salt water, a conductor of electricity, from the contact chamber. *Write for Bulletin 700.* This illustrated 16-page booklet gives full details on all Gurley Current Meter outfits.

Gurley Water Level Recorders make continuous graphic record for entire day or week.

The float-operated Gurley Graphic Water Level Recorder, simple in construction and operation, is widely used in reservoirs, sewers, sewage disposal and hydro-electric plants, and supplements irrigation and stream gaging measurements.

Made of non-corrosive materials, Gurley Recorders make a *continuous* graphic record. A rectangular chart is used. Available in natural scale models or others adaptable from 1 to 40 feet. *Write for details.*



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in certificates to FHA that the required 10% down payments had been made by the home owners although they had not been paid. His firm specialized in home modernization—mainly roofing and siding.

Evidence was presented that home owners were "high-pressured" into signing contracts, with salesmen getting as much as 60% of the contract price as commission. Two former Sta-Tex salesmen, Arnold Woll and James N. Stefan, have pleaded guilty to charges of misrepresentation and they await sentence.

Business briefs . . .

- **Corporate financing** to raise new money was $1.5 billion in the first quarter according to the Securities and Exchange Commission. In the same period last year, it was $1.8 billion. There was a sharp drop in new issues of stocks and bonds by manufacturers, while the issues of public utilities showed an increase.

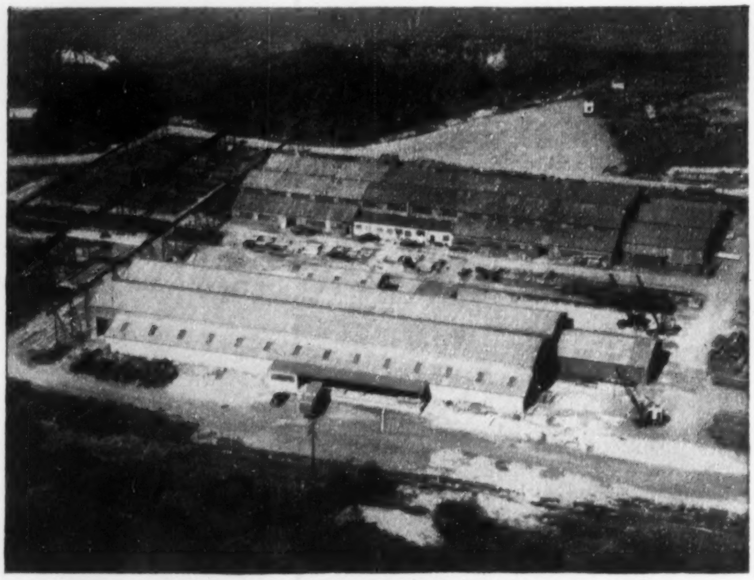
- **$84-million bridge** is planned by Louisiana's Mississippi River Bridge Authority to cross the river at New Orleans. Contracts are expected to be awarded late this year. When built, the 2.2-mi structure may be the longest cantilever-type structure in the U.S.

- **50-story office building,** to cost between $75 million and $80 million, is planned for Toronto by a group of Canadian and American investors. According to the Chicago real estate and financial firm of Norman Barnes & Co., it would be built on the site of the present city hall and part of it would be used for city offices.

- **Panhandle Eastern Pipe Line Co.,** of New York, has asked the Federal Power Commission's OK to double its distribution capacity. The program will cost about $67 million.

- **Southern Pacific Co.** plans to spend about $60 million or $65 million on capital improvements this year, compared with $109 million in 1952. Since World War II, the railroad has spent about $500 billion on new plant and equipment.

- **More cement for Florida**—Lehigh Portland Cement Co. will expand by 80% the capacity of its plant at Bunnell, in northern Florida. The original plant was built only two years ago.



Prefabricator expands plant again

To meet mounting demand for prefabricated steel structures in the nonresidential field, (ENR May 22, 1952, p. 54) Luria Engineering Co., of New York City, has just completed its third plant expansion since 1950. It has doubled the size of its fabricating plant at Bethlehem, Pa., by putting up a 40,800-sq ft steel-frame structure (foreground, picture above). The new plant is equipped with automatic steel-cutting and hole-punching machines and other facilities for fast mass production of pre-engineered buildings. The prefabricated structures are used for factories, warehouses, terminals, hangars, airfield service buildings, and other purposes.

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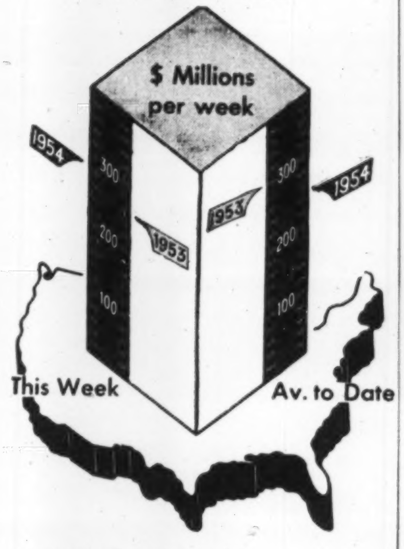
Activity This Week

As reported to ENR
(In millions of dollars)



Amount of contracts let

	This Week	Cumulative 21 wks 1954	Cumulative 21 wks 1953	% chge
Federal	$19.7	$413.0	$601.9	—31
State and municipal ..	116.6	1,798.4	1,939.0	—7
Total pub...	136.3	2,211.4	2,540.9	—13
Total priv...	152.2	3,151.5	3,755.4	—16
U. S. total..	**$288.5**	**$5,362.9**	**$6,296.3**	**—15**

Contracts by type of work

	This Week	1954	1953	% chge
Waterworks .	$10.6	$97.6	$99.3	—2
Sewerage ...	6.4	151.3	155.6	—3
Bridges	7.8	149.4	244.9	—39
Highways ..	53.0	650.9	645.8	+1
Earthwork, waterways .	2.7	113.2	137.6	—18
Buildings:				
Public. excl. hsg.	39.8	658.5	664.0	—1
Housg., pub.	3.6	73.9	244.4	—70
Housg., priv.	83.2	1,743.3	1,674.3	+4
Commercial	30.8	511.1	427.6	+20
Industrial .	32.2	777.1	1,331.2	—42
Unclassified .	18.4	436.6	671.6	—35
Total	**$288.5**	**$5,362.9**	**$6,296.3**	**—15**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

New capital for construction

(millions of dollars)	Week of May 20 1954	Cumulative 20 Wks 1954	% chge 1953-54
Corporate securities	$25.8	$1,195.1	—24
State and muncipial:			
All except housing	225.9	2,238.3	+47
Housing	...	42.6	—77
Federal loans	1.1	48.8	—4
Federal aid	55.0	55.0	...
Total non-federal..	**$307.8**	**$3,579.9**	**+8**
Federal approprs.:			
In U. S.	56.0	56.0	...
Outside U. S....	4.6	4.6	...
Total new capital..	**$368.4**	**$3,640.5**	**+9**

ENR indexes

		Base years = 100 1913	1926	1949
Constr.	..**May '54**	**618.69**	**297.40**	**129.70**
cost	...Apr '54	615.36	295.80	129.00
Bldg.	...**May '54**	**438.69**	**237.14**	**124.70**
cost	...Apr '54	437.94	236.74	124.49
Volume	..**Apr '54**	**517**	**210**	**149**
	Mar '54	426	173	123

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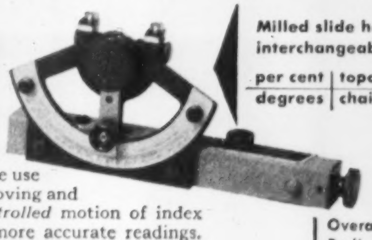

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Bids: June 10, 1954

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Public Building Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced Standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 10th day of June 1954, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, N. F. Ronan, Asst. District Engineer, 353 Broadway, Albany, N. Y.						
Albany	FARC 54-6	Guilderland Center-Guilderland, S. H. 365. Schoharie Pts. 1 & 2, S.H. 177 Proj. S-427(1)	2.01	Asp. Conc. Optional	$7,000 Plans $10	$119,000
Saratoga	FGSH 54-10 FGC 54-6	Waterford-Mechanicville Pt. 3 Mechanicville City: South City Line to FAC 50-14 Proj. U-UG-319(3)	0.78 (0.58 Acc.)	9″ Cem. Conc. Pavt. 14′-24′ Wide=0.78 Mi. Cem. Conc. Pavt. Conn. Rds.=0.58 Mi. R. R. Gr. Sep. Comp. I-beams 240′	$54,000	980,000
DISTRICT No. 2, L. Ketchum, District Engineer, 109 No. Genesee Street, Utica, N. Y.						
Herkimer, Oneida Montgomery	RC 54-68	Br. No. 1A, S. H. 5248; Br. No. 2A, S. H. 5248; Br. No. 1, S. H. 1805; Br. No. 1, S. H. 831-CA	....	Cleaning & Painting 4 Bridges	$1,300 Plans $10	22,000
DISTRICT No. 3, William Robinson, Weigh Lock Building, Syracuse, N. Y.						
Cayuga, Seneca, Onondaga	OT 54-2 MT 54-1	New York State Thruway-Ontario Section-Subs. 1, 2, 3, 4, 5, 6, 7 & 8A (Ontario Co. Line-Brewerton Rd.) Mohawk Section Sub. 8B (Brewerton Rd.-Madison Co. Line)	47.79	Chain Link Fence=0.07 Mi. Cattle Fencing=7.71 Mi.	$2,600 Plans $10	48,000
DISTRICT No. 5, C. R. Waters, District Engineer, 65 Court Street, Buffalo, N. Y.						
Cattaraugus	FAC 54-5 FARC 54-65	Salamanca City: Broad St. (West City Line-State Park Ave.) East Randolph-Salamanca Pt. 2, S. H. 8308 Proj. U-356(5) Cont. #1	1.97	Asp. Conc. Ty. 2A=1.95 Mi; Misc. Work=0.02 Mi.	$23,000 Plans $15	403,000
Erie	FASG 54-10	Walden Ave.-Ellicott Road R. C. 318 Proj. SG-380(2)	0.09	Asp. Conc. Opt. R. R. Sep. Comp. I-beam 93.2	$5,500 Plans $10	100,000
Erie	FASS 54-9	Duerr Road, C. R. 463 and Thorne Street, C. R. 136 Proj. S-330(1)	1.46	Asp. Conc. Opt.=1.40 Mi. Misc. Work=0.06 Mi.	$8,500 Plans $10	155,000
DISTRICT No. 6, J. H. Thomas, District Engineer, State Office Building, Hornell, N. Y.						
Allegany, Chemung, Tioga and Yates	RC 54-67	Various Highways (Tree Removal)	....	Removal of 214 Trees	$700 Plans $10	12,000
Steuben	FGRC 54-69	D. L. & W. R. R. Separation of Grades with Wayland-Dansville Pt. 1, S. H. 1292 Proj. FG-510(3)	0.05	Asp. Conc. Opt.°=0.02 Mi. Misc. Work=0.03 Mi. Alter, Exist. R. R. Sep. Comp. I-beam 49′	$4,500 Plans $10	79,000
DISTRICT No. 9, F. W. Donovan, District Engineer, 71 Frederick St., Binghamton 21F, N. Y.						
Schoharie	RC 54-66	Various Highways (Tree Removal)	....	Removal of 111 Trees	$750 Plans $10	13,000
DISTRICT No. 10, M. E. Goul, District Engineer, Montauk Highway at Little East Neck Rd., Babylon, L. I., N. Y.						
Bronx	FAMDE 54-2	Major Deegan Expressway Extension (Cont. 8A) Proj. U-1082(20)	0.55	Sheet Asp. Pavt.=0.43 Mi. Misc. Work=0.12 Mi. Alterations I. R. T. El. R. R. Alterations to Van Cortland Park Utilities	$48,000 Plans $25	805,000
Bronx	FAMDE 54-4	Major Deegan Expressway, Contract 5B Proj. U-UI-UG-1082(19)	1.58	9″ Cem. Conc. Pavt. 2 @ 36′ Wide & Misc. Work=0.82 Mi. Sheet Asp. Pavt.=0.76 Mi. 1 Hy. Sep. Comp.° I-beam 145.3′ 1 R. R. Sep. Comp. I-beam (Superst.) 145.4′	$158,000 Plans $50	2,863,000
Nassau	FGSH 54-11	Horace Harding Expressway Extension (North Service Road) (Cont. #1) Proj. UG-862(2)	0.51	8″ Cem. Conc. Pavt. 24′ Var. Wide=0.31 Mi. Misc. Work=0.20 Mi. R. R. Sep. Plate Girder 213.3′	$50,000 Plans $15	874,000
Suffolk	B. P. 54-33A & 50A	Moriches Inlet	0.38	Extension of East & West Stone Jetties and Erection of Light Tower	5% of Bid Plans $10	323,200

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

enable you to get the greatest variety of bids —and so to get the lowest prices consistent with the best work.

Bids: June 16, 1954

Construction of Superstructure

STATE OF RHODE ISLAND AND
PROVIDENCE PLANTATIONS
DEPARTMENT OF ADMINISTRATION
DIVISION OF PURCHASES
NOTICE TO BRIDGE CONTRACTORS

Sealed Proposals addressed to the Division of Purchases and enclosed in an envelope endorsed "Proposal for the construction of the superstructure of Sakonnet River Bridge", will be received by the Division of Purchases at the office of the State Purchasing Agent, Room 123, State House, Smith St., Providence, R. I., until 11:30 A.M., E.D.T. on the 16th day of June, 1954, at which time they will be opened and read in public.

R.I. Contract No. 5453, County of Newport, Towns of Portsmouth and Tiverton, Sakonnet River Bridge No. 250 over the Sakonnet River. This project consists of furnishing, fabricating, erecting and painting all structural steel and associated metals required for the bridge superstructure, including the steel grid floor and structural steel bents, involving approximately 7,880 tons. No concrete is involved in this contract.

Bids for the above work must be made on blanks furnished by the Department of Public Works, Division of Roads and Bridges. Plans and specifications and Special Provisions may be examined at Room 123, State House or 232 State Office Building, Providence, R. I., on and after Wednesday, May 19, 1954, every week day except Saturdays and holidays between the hours of 8:30 A.M. and 4:30 P.M. E.D.T. Blanks for submitting proposals may be obtained thru the office of the State Purchasing Agent at the address above stated. A deposit of $100.00 shall be made for each set of documents, which will be refunded if plans and specifications are returned in good condition within two weeks after the opening of bids.

A certified check or bid bond payable to the State of Rhode Island, or cash, in the amount of $100,000.00 must be furnished by each bidder, which proposal guaranty will be returned after the contract has been executed, unless forfeited in accordance with the stipulations in the proposal.

A performance bond of one hundred (100) percent of the contract price with a satisfactory surety company will be required of the successful bidder. The Division of Purchases reserves the right to reject any or all bids.

EMPLOYMENT LIST: A local employment service has been designated by the R. I. Employment Service to prepare the employment lists for this project. Requests for men to be employed on this project shall be submitted to the District Office, 284 Thames St., Newport, R. I.

WAGES OF LABOR: In conformity with the provisions of Chapters 290 and 291, General Laws, 1938, the minimum wages for a day's work paid craftsmen, teamsters and laborers shall not be less than the customary and prevailing rate of wages for a day's work in the same trade or occupation in the locality where the work is undertaken. Such a schedule of wages has been established on a minimum hourly basis and is on file in the office of the State Department of Labor. The contractor shall pay not less than these minimum rates.

SUBLETTING OR ASSIGNING THE CONTRACT: The attention of bidders is directed to the Standard and/or Special Provisions covering subletting or assigning the contract.

DEPARTMENT OF ADMINISTRATION,
DIVISION OF PURCHASES
By: Franklin A. Adams,
State Purchasing Agent.

Read the Official
Proposal Columns of
ENGINEERING NEWS-RECORD
This Week and Every Week

Bids: June 15, 1954

Construction of Steel Pipe Lines

City of Richmond, Virginia

Sealed Proposals will be received at the office of the City Purchasing Agent, 4th floor, Mosque Building, Laurel and Main Streets, Richmond, Virginia, until but not later than 11 o'clock A.M., E.S.T. June 15, 1954, at which time they will be publicly opened and read aloud, for the following work which may be awarded in whole or in part:

Location: From Brander Street on the south bank, north of the proposed sewage treatment plant site, under the James River to a location near the City Lock, in the City of Richmond, Virginia.

Type of Work: The work to be done is part of the Sewage Disposal Project, is entitled "Division A—City Lock River Crossing", and comprises the construction of two parallel 66-inch subaqueous reinforced concrete or steel pipe lines, totalling approximately 2,100 linear feet, under a channel approximately 7-feet deep.

The Proposal must be submitted on the proposal forms included in the Contract Documents.

Each Proposal must be accompanied by a certified or cashier's check made payable to the City of Richmond, equal to 5% of the amount of the Proposal, or bid bond equal to 6% of the amount of the Proposal, or be covered by an annual bid bond in the amount of at least 6% of the Proposal.

The Proposal Guaranty is required as an evidence of good faith and as a guaranty that, if the Proposal of bidder is accepted, the bidder will enter into the formal written Contract and furnish satisfactory Performance Bond. Check will be forfeited or bid bond will become due and payable if the bidder whose Proposal is accepted fails to furnish the required Performance Bond, or fails to execute a formal written Contract. Check of successful bidder will be returned after the Contract is executed.

The Bureau of Purchases reserves the right to waive any informality in bids.

The Contract may be awarded by the Purchasing Agent to the lowest responsible bidder, who shall be determined in accordance with rules and regulations governing purchases or contracts adopted and established by the Council and in accordance with and pursuant to sections 5.09, 5.11 and 12.07 of the City Charter.

The City Council shall have the power to authorize the Purchasing Agent to reject any or all bids, to re-advertise for bids, or to make the purchase or contract in the open market either after the rejection of all bids or before competitive bids have been requested.

The unit prices bid will be carefully examined and compared with current values before recommending the award of the Contract. If in the opinion of the Director the unit prices submitted are substantially over or under accepted current values, it will be deemed sufficient reason to recommend rejection of the bid, and further to recommend the award of the Contract to another responsible bidder. In case of error in the extension of a price in the bid, the unit price shall govern.

Attention is directed to Chapter 7 of Title 54 of the Code of Virginia of 1950. The act requires all contractors and subcontractors bidding on any project where the cost of the undertaking of the bidder is $20,000.00 or more, to register with and obtain a certificate from the State Registration Board for Contractors. Bids from contractors not complying with this law will not be considered. Anyone bidding as a general contractor whose bid includes sub bids amounting separately to $20,000.00 or more is required to obtain evidence from such subcontractors that they have complied with the law.

Any contractor submitting a bid on this project amounting to $20,000.00 or more, must insert the following statement in his bid over his signature: "Registered as a contractor under Chapter 7 of Title 54 of the Code of Virginia of 1950. Certificate No. ...., 19....".

Bidders must enclose with their Proposals, in a separate sealed envelope, complete information as to experience, equipment and financial condition on the form provided. Failure to submit this statement will constitute basis for rejection of the bid.

The Proposal, Instructions to Bidders, Contract, Performance Bond, Instructions to the Contractor, Specifications, Plans, and other Contract Documents may be examined at the office of the Director of the Department of Public Works, 217 Governor Street, Richmond, Virginia, and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago 4, Illinois. Copies of the Contract Documents may be obtained from the Director or the Engineers upon deposit of Twenty-five Dollars for each set, to be refunded upon the return of such set in good condition within 10 days after the opening of bids.

The Director reserves and shall have the right before award of contract to determine which of the two alternate pipe materials will be selected for Division A—City Lock River Crossing, and the award of contract will be made by the Bureau of Purchases to a responsible bidder based upon the type of material selected.

It shall be understood that all documents referred to in this Notice to Bidders shall be carefully examined and read and are all hereby made a part of the Proposal.

J. W. HUFFMAN,
City Purchasing Agent

Bids: June 8, 1954

Rt. 25 (1927) Rt. U. S. 1 (1953), Secs. 5-J & 6-E, and Rt. S-28 (1927) Rt. 18 (1953), Sec. 1-B

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Route 25 (1927) Route U. S. 1 (1953), Sections 5-J and 6-E, Amboy Avenue and Grandview Avenue, and Route S-28 (1927) Route 18 (1953), Section 1-B, Tunison Road, Intersection Improvements, Raritan Township and City of New Brunswick, Middlesex County. Length of Project 0.165 miles. The principal items of work are:

Estimated:

3,358	cu. yds. Roadway Excavation—Earth
4,034	sq. yds. Macadam Base Course, 8" thick
4,034	sq. yds. Pavement, Type MA-BC-2, 3" thick
987	sq. yds. Concrete Pavement Surface, Rein. 10" thick
2,688	lin. ft. White Concrete Vertical Curb
1,162	lin. ft. White Concrete Sloping Curb

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 8, 1954, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the Standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

OFFICIAL PROPOSALS

Bids: June 3, 1954

Expansion and Reconstruction Improvements

SEALED PROPOSALS will be received by the City Council of the City of Des Moines at the office of the City Clerk until 9:00 o'clock a.m. on the 3rd day of June, 1954, for the following Expansion and Reconstruction improvements at the Sewage Treatment Plant as per specifications now on file in the office of the Engineering Division of the Public Works Department and in the office of the City Clerk.

Proposals received will be acted upon by the City Council on the date above specified for the receiving of bids.

Construction or Reconstruction of and equipment for,—

- Digester Tanks and Control House,
- Grit Remover Tank, converted from present grease tank,
- New Pre-Aeration-Grease Removal Tank,
- Reconstructed Pre-Aeration-Grease Removal Tank,
- Compressor House,
- Sewage Metering Equipment,
- Sludge Drying Beds,
- Conduit through storm water tank,
- Conduits, new and reconstructed,
- Hydraulic lift for main gate,
- 1600 tons of filter stone,
- Fourteen (14) Rock Jetties,
- Distribution chamber to Primary tanks.

All bids shall be made on the printed forms attached to and made a part of the proposed contract documents.

Work shall be commenced immediately upon approval of the contract by the City Council of the City of Des Moines and fully completed not later than April 1st, 1955.

The proposed contract documents, including the plans, drawings and specifications, pursuant to which the work must be done, are on file at the office of the City Clerk of the City of Des Moines, Iowa, and may be examined there. Copies of these documents may be obtained on deposit of the sum of Fifteen Dollars ($15.00). This deposit will be refunded to each actual bidder upon return of the documents in good condition within a reasonable time after the receipt of bids, and the other deposits, less Five Dollars ($5.00) will be refunded upon return of the documents within thirty days after receipt of bids.

All bids shall be on the basis of cash payment for the work.

All bids shall be accompanied by a certified check drawn on some known responsible bank in the State of Iowa, and made payable to the order of the City Treasurer of the City of Des Moines, in the amount equal to ten per cent (10%) of the amount of the proposal.

The right is reserved to reject any or all bids and waive informalities.

The estimated cost of the construction is $975,000.00.

CITY OF DES MOINES, IOWA
J. J. VAN DRESSER, Mayor
Attest:
ARTHUR JOHNSON, City Clerk
Published in the Des Moines 1954.

Bids: June 10, 1954

Coal Tar Pitch Emulsion Treatment of Pavement

THE PORT OF NEW YORK AUTHORITY
LA GUARDIA AIRPORT
NEW YORK INTERNATIONAL AIRPORT
TETERBORO AIRPORT
NEWARK AIRPORT
CONTRACT O & M 239
PROPOSAL NO. 446

Sealed proposals for furnishing all labor, material and equipment necessary for coal tar pitch emulsion treatment of pavement at La Guardia, New York International, Teterboro and Newark Airports, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (D.S.T.) Thursday, June 10, 1954, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

OFFICIAL PROPOSALS

Bids: June 15, 1954

Electric Lighting Equipment Contract 358

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tuesday, June 15, 1954, for Contract 358, for furnishing, delivering, installing and testing electric lighting equipment, complete in every respect, for the Rondout and West Branch effluent chambers, West Branch influent chamber, Kensico East influent chamber and coagulating plant, drainage chambers at Shafts 6, 13 and 23, and the water sampling station at Shafts 19 of the Delaware aqueduct, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of The City of New York, in the amount of ten thousand dollars ($10,000.00) for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1316 at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same; the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation, Sealed bids (Specifications No. DC-4178) will be received at Ephrata, Washington, until July 1, 1954, for furnishing labor and materials for earthwork, pipe lines, and structures, Block 87 laterals, sublaterals, wasteways, and drains, West Canal Laterals, Columbia Basin Project, Washington. Location: Northwest of Othello, Wash. Principal items are: 680,000 cu. yds., excavation; 28,900 lin. ft. concrete pipe lines; 2,485 cu. yds. concrete in structures; 26,000 lbs., installing pumping units; 80,000 lbs., furnishing and installing gates and miscellaneous metalwork; and other work. Completion time 450 days. For particulars, address Bureau of Reclamation, Ephrata, Washington; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4180) will be received at Coeur d'Alene, Idaho, until June 16, 1954, for furnishing labor and materials for earthwork, steel pipe lines, pumping plant, 50,000-gal. elevated steel water reservoir, and structures, Avondale Irrigation System, Avondale Project, Idaho. Location near Coeur d'Alene, Idaho. Principal items are: 21,700 cu. yds., excavation and backfill of pipe trenches; 2980 lin. ft., furnishing and installing 24-in. O.D. steel pipe in discharge line; 51,350 lin. ft., furnishing and installing 4-in. to 16-in. O.D. steel pipe in distribution system; lump sum, furnishing and erecting 50,000-gal. elevated steel reservoir; and other work. Completion time 170 days. For particulars, address Bureau of Reclamation, Coeur d'Alene, Idaho; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Comissioner.

OFFICIAL PROPOSALS

Bids: See Contents

NOTICE TO BIDDERS

Sealed bids will be received by the Upper Moreland-Hatboro Joint Sewer Authority, Montgomery County, Pennsylvania, at the office of the Secretary, 117 Park Avenue, Willow Grove, Pennsylvania for the construction of improvements to the Hatboro-Upper Moreland Sewage Treatment Plant, the construction of approximately 7.0 miles of intercepting sewers and the construction of approximately 40.2 miles of branch sanitary sewers, until the time and date set forth in the following schedule:

Contracts for Sewage Treatment Plant

		8 P. M. E. D. S. T.
1-A	General, Structural and Exterior Pipe Lines	June 30, 1954
1-B	Mechanical Equipment, Interior Pipe Work	June 30, 1954
1-C	Heating and Ventilating	June 30, 1954
1-D	Plumbing	June 30, 1954
1-E	Electrical	June 30, 1954

Contracts for Interceptor Sewers

2	Upper Moreland—West Interceptor	June 9, 1954
3	Upper Moreland—Northwest Interceptor	June 9, 1954
4	Upper Moreland and Hatboro—Hatboro and Southwest Interceptors	June 9, 1954
5	Upper Moreland and Hatboro—Hatboro, Gardens and Fern Village Interceptors	June 9, 1954

Contracts for Branch Sewers

6	Upper Moreland Township	June 16, 1954
7	Upper Moreland Township	June 16, 1954
8	Upper Moreland Township	June 16, 1954
9	Upper Moreland and Hatboro	June 16, 1954
10	Upper Moreland and Hatboro	June 23, 1954
11	Upper Moreland and Hatboro	June 23, 1954
12	Upper Moreland Township	June 23, 1954

Bids will be opened and read publicly at the time and place stated above, but no bid shall be allowed to be withdrawn for a period of ninety (90) days thereafter.

Plans, specifications and contract documents may be seen and obtained at the office of George B. Mebus, Inc., Consulting Engineers, Northwestern National Bank Building, Glenside, Pennsylvania.

A deposit of $35.00 will be required for each set of plans and specifications for the Sewage Treatment Plant contracts and a deposit of $30.00 will be required for each set of plans and specifications for the Interceptor and Branch Sewer contracts.

There will be a refund of $20.00 for the return of complete sets of plans and specifications, in good condition, if received in the Engineer's office by 5 P.M.:

For Contracts 1-A, 1-B, 1-C,
1-D, 1-E ....July 6, 1954
For Contracts #2, #3, #4, #5 June 14, 1954
For Contracts #6, #7, #8, #9 June 21, 1954
For Contracts #10, #11, #12 June 28, 1954

A certified check or bid bond approved by the Authority in the amount of 5% of the amount of the total bid tendered, made payable to the Upper Moreland-Hatboro Joint Sewer Authority, shall accompany each bid tendered. The certified checks or bid bonds of all but the three low bidders, will be returned within forty-eight hours after the award of the contract. The certified checks or bid bonds of the three low bidders, will be returned upon the execution of the contract.

Bids shall be submitted, bound in the specifications in a sealed envelope addressed to the Upper Moreland-Hatboro Joint Sewer Authority and shall be plainly marked showing the contract/s for which bids are submitted.

The Authority reserves the right to reject any or all bids and waive informalities or take such other action that it may deem to be in the best interest of the Authority, and as may be permitted by law.

Upper Moreland-Hatboro Joint Sewer Au
Upper Moreland-Hatboro
Joint Sewer Authority
By Paul Clayton, Chairman

U. S. Government

BIDS FOR CONSTRUCTION OF STEEL OIL BARGES—Memphis District, Corps of Engineers, U. S. Army, P. O. Box 97, Memphis 1, Tenn. Sealed bids will be received at this office until 11:00 a.m., C.S.T., 10 June 1954, and then publicly opened for construction of six steel oil barges. Information on request.

OFFICIAL PROPOSALS

Bids: June 11, 1954

Contract No. 214—Bridges

MAIN TURNPIKE AUTHORITY
MAIN TURNPIKE
Section 2—Portland to Augusta
Augusta Extension

Sealed Proposals will be received by the Maine Turnpike Authority for:

CONTRACT NO. 214—BRIDGES

at the offices of the Authority, 17 Bishop Street, Portland, Maine until 10:00 A.M. Eastern Standard Time, on June 11, 1954, at which time and place the Proposals will be publicly opened and read.

The work included under this Contract consists of the construction of eight bridges, exclusive of the fabrication and delivery F.O.B. cars at Danville Junction, Maine of the steel superstructures therefor but including the erection thereof, along the route of the Turnpike Extension, between Mile 69 in the Town of New Gloucester and Mile 75 in the City of Auburn.

The principal items of work will include:

Structural Excavation-Earth, Cubic Yards	9,118
Reinforcing Steel Bars, Pounds	1,057,575
Concrete in Piers and Abutments, Cubic Yards	6,558
Concrete in Superstructures, Cubic Yards	2,405
Driving Steel H-Piles, Linear Feet	41,520
Cast-In-Place Concrete Piles, Linear Feet	4,680
Erection of Steel Structures, Pounds	2,955,580
Metal Handrail on Concrete Parapets,, Linear Feet	2,614

Plans and contract documents may be examined by prospective bidders during regular office hours at the offices of the Authority at the above address and at the offices of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y., and may be obtained from the Authority, 17 Bishop Street, Portland, Maine, upon payment of Twenty-Five Dollars ($25.00) for each set which will not be refunded. Checks shall be made payable to Howard, Needles, Tammen & Bergendoff.

Proposals must be accompanied by a certified or cashier's check payable to the Maine Turnpike Authority in an amount not less than five per cent (5%) of the Total Amount in the Proposal but not less than $500.00 nor more than $200,000.00.

Proposals must be made upon the Proposal forms furnished separately by the Authority with the contract documents and must be enclosed in the sealed special addressed envelopes provided therefor bearing the name and address of the bidder and the number of the Contract on the outside.

Before the award of the Contract, any bidder may be required to show that he has the necessary facilities, experience, ability and financial resources to perform the work within the time required and to the satisfaction of the Authority.

The Bidder, to whom a Contract is awarded, will be required to furnish a Surety Corporation Bond, satisfactory to the Authority, on the standard Contract Bond form of the Authority, for a sum not less than the total amount of the Proposal.

The Authority reserves the unqualified right to reject all Proposals or to accept that Proposal which in its sole judgment will under all circumstances serve its best interests. The Contract will be awarded or Proposals rejected within thirty days after the date of opening Proposals, except that in the event of default by a successful bidder, the Authority reserves the right to accept the Proposal of any other bidder within twenty days after such default.

MAINE TURNPIKE AUTHORITY
Paul C. Thurston, Chairman
Portland, Maine
May 20, 1954

CONTRACTORS
WATCH
THIS SECTION
for New Projects
Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

Bids: June 10, 1954

Soil Explorations and Foundation Investigations

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on June 10, 1954 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE ROUTE 17 EXPRESSWAY, BRIDGEVILLE TO FERNDALE, SULLIVAN COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-68

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York
(b) Mr. F. W. Donovan, District Engineer, 71 Frederick Street, Binghamton, New York
(c) Mr. Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $37,300.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1865.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. Tallamy
SUPERINTENDENT OF
PUBLIC WORKS

Bids: June 30, 1954

Construction of Grain Terminal

CONSTRUCTION OF GRAIN STORAGE & HANDLING PLANT

The Corporació de Defensa de Productos Agrícolas, an instrumentality of the Republic of Colombia, S. A., will receive sealed competitive bids at its principal office in Bogotá, Colombia, until 4 P. M. Eastern Standard Time on the 30th day of June, 1954, for the immediate construction of an Import-Export Grain Terminal, incorporating marine handling facilities, etc. at Cartagena, in the Republic of Colombia, S. A.

Formal bidding documents, Plans and Specifications, and General Conditions of the Construction Contracts may be inspected by qualified prospective bidders at the offices of the Consulting Engineers for the Corporación, Drying Plant Engineers, Inc., 1001 Connecticut Avenue, N. W. Washington, D. C. and Carrera 8A, No. 15-43, Piso 11, Bogotá, Colombia, after May 10, 1954.

Persons other than qualified prospective bidders for the construction work in the opinion of the Corporación may obtain copies of the bidding documents upon payment of U. S. 100.00, or if they are Colombian firms, upon payment of Col. $100.00.

The type of construction for the structures will be reinforced concrete, prefabricated steel, or a combination of the two materials. The work will include furnishing all materials, equipment and services for a complete plant, ready to operate, at Cartagena and the work will include pile foundations, dock, marine bulkhead and dredging.

Bids shall be for the total requirements of the project but the Corporación reserves the right to reject any or all bids or to award the work or any divisible part to any one or more bidders.

Interested prospective bidders may address inquiries for further information either to the Corporación or to the Consulting Engineers.

OFFICIAL PROPOSALS

Bids: June 11, 1954

Contracts No. 215, No. 215A and No. 215B Bridges

MAIN TURNPIKE AUTHORITY
MAIN TURNPIKE
Section 2—Portland to Augusta
Augusta Extension

Sealed Proposals will be received by the Maine Turnpike Authority for:

CONTRACTS NO. 215, NO. 215A and NO. 215B—BRIDGES

at the offices of the Authority, 17 Bishop Street, Portland, Maine until 10:00 A.M., Eastern Standard Time, on June 11, 1954, at which time and place the Proposals will be publicly opened and read.

The work will be let either (a) under a single contract, Contract No. 215, which includes the construction of nine bridges along the route of the Turnpike Extension between Mile 87 in the Town of Webster and Mile 96 in the Town of Litchfield, or (b) under two separate contracts, Contract 215A which includes three of the above mentioned nine bridges, and Contract No. 215B which includes the remaining six bridges. Such bridge construction will include the erection of the steel superstructures, which will be fabricated and delivered FOB cars at Brunswick, Maine, by others.

The principal items of work for Contracts Nos. 215A, 215B and 215 include:

	Contract No. 215A	Contract No. 215B	Contract No. 215
Structural Excavation-Earth, Cubic Yards	1,195	4,595	5,790
Reinforcing Steel Bars, Pounds	185,640	521,955	707,595
Concrete in Piers and Abutments, Cubic Yards	932	2,803	3,735
Concrete in Superstructures, Cubic Yards	590	1,448	2,038
Driving Steel H-Piles, Linear Feet	0	3,243	3,243
Erection of Steel Structures, Pounds	410,140	1,406,330	1,816,470
Metal Handrail on Concrete Parapets, Linear Feet	1,427	2,655	4,082

Plans and contract documents may be examined by prospective bidders during regular office hours at the offices of the Authority at the above address and at the offices of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y., and may be obtained from the Authority, 17 Bishop Street, Portland, Maine, upon payment of Thirty Dollars ($30.00) for each set of Contract No. 215 covering the entire Project. The plans and contract documents need not be returned and the payment will not be refunded. Checks shall be made payable to Howard, Needles, Tammen & Bergendoff.

Proposals must be accompanied by a certified or cashier's check payable to the Maine Turnpike Authority in an amount not less than five per cent (5%) of the Total Amount in the Proposal but not less than $500.00 nor more than $200,000.00.

If a bidder submits a Proposal for Contract No. 215, as well as a Proposal for Contract No. 215A and/or Contract 215B, one check based on the Total Amount in the Proposal for Contract No. 215 will be sufficient.

Proposals must be made upon the Proposal forms furnished separately by the Authority with the contract documents and must be enclosed in the sealed special addressed envelopes provided therefor bearing the name and address of the bidder and the number of the Contract on the outside.

Before the award of the Contract, any bidder may be required to show that he has the necessary facilities, experience, ability and financial resources to perform the work within the time required and to the satisfaction of the Authority.

The bidder, to whom a contract is awarded, will be required to furnish a Surety Corporation Bond, satisfactory to the Authority, on the standard Contract Bond form of the Authority, for a sum not less than the Total Amount of the Proposal.

The Authority reserves the unqualified right to reject all Proposals or to accept that Proposal which in its sole judgment will under all circumstances serve its best interests. The Contract will be awarded or Proposals rejected within thirty days after the date of opening Proposals, except that in the event of default by a successful bidder the Authority reserves the right to accept the Proposal of any other bidder within twenty days after such default.

MAINE TURNPIKE AUTHORITY
Paul C. Thurston, Chairman
Portland, Maine
May 20, 1954

SOUTH AMERICAN POSITIONS

MILL METALLURGIST for large copper concentrator, to work directly under Asst. Superintendent and be in full charge of all testing and research.

YOUNG CIVIL ENGINEERING GRADUATE with some experience in maintenance of track and track equipment for Railroad Department.

ASSISTANT RAILROAD SUPERINTENDENT for operation and maintenance of 44 miles of thirty-inch gauge main line track diesel electric locomotives, etc.

SMELTER SUPERINTENDENT, graduate Metallurgical or Chemical Engineer, with experience smelter operation and maintenance. Design or construction would be valuable.

ASSISTANT CHIEF MECHANICAL ENGINEER, experienced in shop practices, including supervision repair and production shops. Knowledge of iron, steel, and brass foundries, also field construction and installations.

GRADUATE MECHANICAL ENGINEER with several years experience in actual supervision of large shops comprising Machine Shops, Plate & Welding Shops, Iron, Steel and Brass Foundries.

Large Copper Company Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by Company. Good opportunities. In reply give complete details.

P-2801, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

BRIDGE ENGINEERS AND SPECIFICATION WRITERS

Civil Graduates of accredited U. S. colleges. Must have not less than the following experience:

Detailers—2 years structural steel or reinforced concrete detailing.

Designers—5 years responsible work on structural steel and concrete including work on long span bridges.

Squad Leaders—3 years responsible charge of squad on structural steel detailing.

Specification Writers—With design and field experience for writing specifications for steel bridges, concrete structures, and highway construction.

Please mail complete resume together with salary required to:

Howard, Needles, Tammen & Bergendoff
55 Liberty Street New York 5, N. Y.

CONSTRUCTION MANAGER

Large Eastern heavy contractor is seeking a project manager to head its branch office in New York City. This man must have prior record of successful administration on heavy contracts, ability to estimate such jobs and run them after award. Salary plus participation in earnings.

P-2797 Engineering News-Record
330 W. 42 St. New York 36, N. Y.

ENGINEER (C.E.) - ATTORNEY

Interesting position for an experienced Civil Engineer who is also (1) a real estate Attorney or (2) has had extensive legal training or experience in real estate and construction transactions. Metropolitan N. Y. area. Salary open.

P-2832, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

Detail-designers, highway and railroad bridges. Submit resume and sample of work. Interesting work in pleasant surroundings.

A. BURTON COHEN ASSOCIATES
1 Madison Avenue New York 10, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

PROJECT SUPERINTENDENT on heavy and highway construction for well established company operating primarily in Ohio, Indiana and Pennsylvania. State age, experience, salary expected, references and availability. P-2709, Engineering News-Record.

WANTED — SEVERAL experienced checkers and detailers, buildings, bridges. Excellent working conditions. Address application, giving resume of education and experience to Chief Engineer, Nashville Bridge Company, Nashville 1, Tennessee.

HIGHWAY CONSTRUCTION Engineer for technical, promotional, educational work in Wisconsin. Permanent. Please give summary of education, experience, salary requirements in reply. P-2586, Engineering News-Record.

ENGINEERS DESIGNERS. Engineering Draftsmen for established consulting firm designing sewers, pumping stations, sewage treatment plants, water supply system, etc. Layout and detail drafting on structures, piping, reinforced concrete. Structural and hydraulic computations, specifications. Give full particulars. Location, New York State. Our employees know of this advertisement. P-2649, Engineering News-Record.

ESTIMATOR: GENERAL Contracting firm in eastern West Virginia. Must have take-off experience in all types of commercial and public buildings. Drafting ability advantageous. Reply giving age, education, experience and salary desired. P-2680, Engineering News-Record.

TEACHING POSITION — Engineering graduate, industrial and teaching experience desirable. Opportunity to work on advance degree. Salary depends upon qualifications. Write Head, Department of Engineering Drawing, Iowa State College, Ames, Iowa.

CIVIL ENGINEER, young graduate preferred, but not required, as assistant to City Engineer in Pennsylvania. City of 20,000 population Nice clean college city with good government and up-to-date municipal utilities, including city owned activated sludge sewage treatment plant, water works, modern incinerator. Good living conditions and salary commensurate with education and experience. Give full details about yourself in first letter. Opportunity as City Engineer in a few years for right man. Address all replies to Box P-2748, Engineering News-Record.

PLANT SUPERINTENDENT wanted for old established structural precast concrete Plant. Preferably with Engineering background. Please submit complete resume stating experience, salary required and date available to P-2395, Engineering News-Record.

EXPERIENCED ESTIMATOR and Chief Engineer between the ages of 32 and 42, to make quantity take-offs, help price, buy, expedite and do some field supervision. All our work is competitive. We specialize in industrial, commercial and public works. Only experienced and high-grade men need apply. Permanent job for the right man. Excellent salary and bonus. Office located in Ohio. Send qualifications, experience and photograph, if available. P-2847, Engineering News-Record.

N. J. LICENSED Surveyor to work in Morris County office of surveying firm. State salary and send complete resume. P-2843, Engineering News-Record.

CHIEF ESTIMATOR—Substantial heavy construction firm operating on a world wide basis desires experienced construction executive to assume direction of established estimating department in New York City. Substantial experience in site investigation, pre-estimate job planning and final bidding of marine structures, dams, tunnels, power plants, roads, airfields, bridges, etc. essential. Knowledge of foreign construction operation desirable. Willingness to travel necessary. Outline experience in detail. Reply P-2811, Engineering News-Record.

YOUNG ARCHITECT or Engineer design and architectural supervision of construction of store buildings. Degree and 5 years experience. Location Southeast U. S. Considerable traveling. Good future. P-2810, Engineering News-Record.

SELLING OPPORTUNITIES OFFERED

WANTED—GRADUATE Civil Engineer, experience in paving and public works preferred, by long established promotional and educational organization, to be a representative in the Central New York State area. Age 30 to 40. Give resume of education, engineering experience, and salary requirements in reply. RW-2747, Engineering News-Record.

SELLING OPPORTUNITIES OFFERED

SALES ENGINEER — Rochester, New York and Pittsburgh, Pennsylvania territories open with established national concern selling prefabricated metal products to engineering and construction markets. Positions are permanent and offer excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience unnecessary. Ages 24 to 30. Car furnished. Complete training program. Salary and bonus. RW-2289, Engineering News-Record.

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SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

BUILDING CONSTRUCTION executive, thoroughly experienced estimating, buying subcontracts, materials, etc., managing field to produce good costs and solicitation of new business. PW-2733, Engineering News-Record.

ARCHITECT/OWNER Representative — or comparable executive position where 25 years of diversified construction experience will be utilized. Age 46, 18 years as contractors' Superintendent and Engineer. Past 7 years as Architects' Representative on multi-million dollar projects. Now completing supervision of largest General Office Building built in suburban New York area. Only New York Area considered. Raymond V. Hand, Baldwin Road, Yorktown Heights, New York.

MECHANICAL SUPT., Mechanical inspector or master mechanic. Twenty-five years' experience with Erection, Repair, Maintenance of heavy industrial equipment in Power Plants, Pumping Stations, Industrial Buildings, Supervising Installation, Testing Air Conditioning, Freon Refrigeration, Steam Boilers, Steam Distribution, P.O.L. Systems, Heating, Plumbing, Diesel Engine Driven Generators. Available now. PW-2753, Engineering News-Record.

CHIEF ESTIMATOR or Operation Executive: Available for General Contractor with sufficient volume to warrant experienced personnel. Currently employed but wanting other connection, preferably in the South. PW-2686, Engineering News-Record.

GENERAL SUPERINTENDENT and Engineer desires work in California or West Coast after July 15th. Experienced heavy construction, roads, bridges, foundations, Cobi pile, vertical sand drains, marine work, estimating. PW-2688, Engineering News-Record.

CIVIL ENGINEER: Registered 6 yrs. experience in construction, field and office: estimating; design; on heavy industrial, commercial, highway, and railroad. Available in June. Southern location preferred. PW-2646, Engineering News-Record.

(Continued on the opposite page)

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POSITIONS WANTED

(Continued from the opposite page)

ASSISTANT SUPERINTENDENT & field engineer, B.S.C.E. 5 yrs. const. exper. salary $125 per wk. Box PW-2632, Engineering News-Record.

SUPT. CONCRETE paving 8 years exp. age 35 years, also general Manager — Ready mixed concrete plant. PW-2469, Engineering News-Record.

ASSISTANT SUPT. or General foreman for B-W-I., Central or South America. 17 years experience Rock & Earth excavation, also Mechanical and handling of equipment and men. Have good following of American and native help. Just completed 15 months in B-W-I. Available now. PW-2587, Engineering News-Record.

CONST. SUPT. Engineer twenty years experience industrial commercial utilities. Relocate. PW-2833, Engineering News-Record.

CONSTRUCTION AND Field Engineer. Registered. Age 54. Broad experience preliminaries, design, layout and construction. Waterworks, sanitation, industrial, railroad, development, heavy construction. Available 3 weeks. No straight drafting or design. Prefer supervision construction program for owners. PW-2827. Engineering News-Record.

SALES ENGINEER—Graduate civil engineer, registered, age 39. Proven record sales, research, development. Broad experience in concrete, admixtures, lightweight aggregates, concrete products. Seeks responsible position in ready mix, concrete products, or consulting firm Penna. Ohio, N. Y. Box PW-2792, Engineering News-Record.

SUPERINTENDENT OF Building Construction, desires position, preferable East. Diversified experience, majority, schools, banks, theaters, clubs, Commercials and Government work. Full responsibility. PW-2793, Engineering News-Record.

ENGINEER, REG.P.E. 40 years experience. Adjustment of contractors' claims. Change orders. PW-2840, Engineering News-Record.

CONSTRUCTION ENGINEER: Desires new connection as Chief Estimator or Construction Manager. Twenty (20) yrs. experience all types building construction. Take-Off, Pricing, Sub. Bid Evaluation, and Supervision. Qualified to manage branch office for medium size or expanding firm. South or South-west preferred. PW-2841, Engineering News-Record.

WANTED

ANYTHING within reason that is wanted in the field served by Engineering News-Record can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

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BO-2614, Engineering News-Record
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11'3" x 11'0" Vertical Lift Steel Hydraulic Gate. 16,000 lb./sq.in. Maximum unit stress. 5500 lbs. weight. Complete with 34'2" guides. Originally designed as trash gate on hydro-electric project. Unused.

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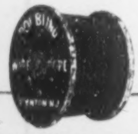

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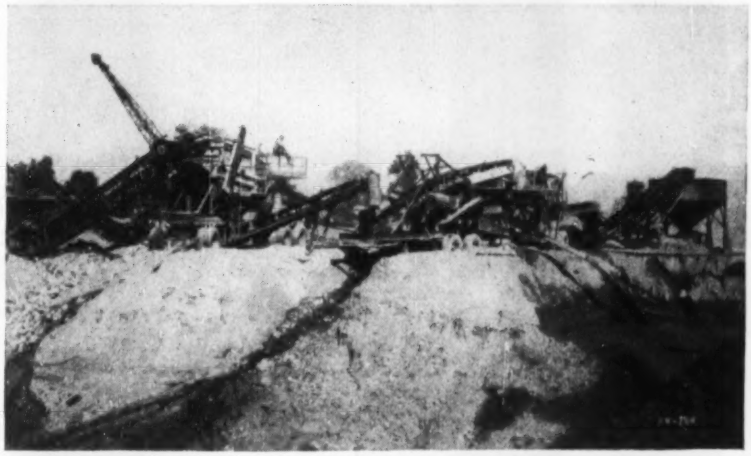


PORTABLE sand washing and screening plant working in conjunction with a Pioneer portable aggregates plant. On short moves the plant can be transported without removal of the feeder; on long hauls it is preferable to remove the feeder and frame extensions and fold up the conveyor.

Portable washing and screening plant

A completely portable sand washing and screening plant has been designed for production from sand bars and gravel pits and washing and separating pre-crushed aggregate.

Designated the 412-VW, the plant features a large vibrating screen to provide accurate separation and a long, twin screw dehydrator to wash the material thoroughly and to squeeze out dirt and impurities.

The plant is rated at 100 to 150 tons per hour total capacity and is reported to produce with ease 75 tons of clean sand per hour when the material contains not more than 50 per cent gravel.

Two sizes can be produced—sand and coarse aggregate—and three methods are provided to control the amount of fines retained or wasted: regulation of water flow; adjustment of the overflow weir; and changing the baffle height.

The plant is mounted on pneumatic tires and is equipped with air brakes controlled from the towing unit and manually from the operator's platform. All conveyors are fully supported on the plant and fold for travel; each is driven from the plant and controlled by clutch from a lever on the operator's platform. The power unit is mounted over the rear equalizer and does not have to be removed for travel.

Plant units include a 24G (reciprocating plate type) feeder with 6-ft sq hopper and trap grate; a 4 x 12-ft, 2-deck, 4-bearing, positive throw eccentric-type vibrating screen; a 22-in. x 20-ft twin screw Eagle dehydrator with settling tank, adjustable overflow weir and adjustable baffles; a 24-in. x 32-ft feeder conveyor; a 30-in. x 18-ft sand delivery conveyor and an oversize delivery conveyor.

Power requirement is 60 hp (continuous), and water required will run to a maximum of 700 gpm at 50 psi.

The main truck consists of a 15-in. channel main frame on three axles with equalizer. 12.00:20 tires are used; four dual mounted on front and four singly mounted on rear axles.

Width is kept to a legal 8 ft; wheelbase is 24 ft 3 in.; traveling height is 13 ft. Weight with power is 30,000 lb on the rear equalizer and 18,000 lb on the front axle. Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Flange unit offers speedy connections for pumps

A new flange unit has been developed by the manufacturer to speed the connection of plastic and steel pipes to the pumps of Rapidayton water systems.

The basic unit consists of a rubber gasket, a malleable iron flange and two bolts.

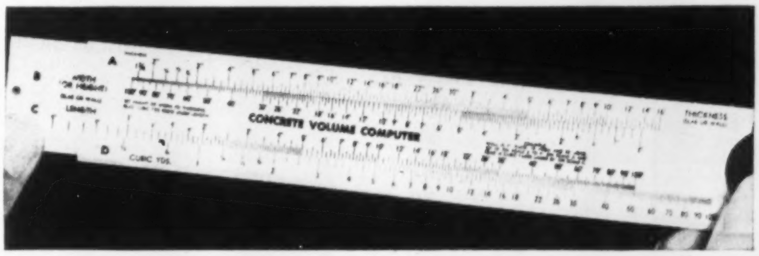
Steel pipes—with or without threads—are secured to the pump by inserting the ends into the flange and tightening two bolts.

When plastic pipe is used, brass inserts are first pushed into the ends of the suction and pressure pipes before the pipes are attached to the pump. The two inserts are furnished with the pump at no extra cost.

The new unit will become standard equipment on certain Rapidayton models. Dayton Pump & Mfg. Co., 500 N. Webster St., Dayton 1, Ohio.

(*New Products continued on page 92*)

Rapidayton



Concrete volume estimator offered

Free for the asking, a new slide rule-type computer is offered to anyone faced with the problem of estimating the yardage of concrete required for any size slab. The thickness and height or width are opposed on the upper scales and the yardage is read beneath slab length on lower scales. Stow Mfg. Co., 19 Shear St., Binghamton, N. Y.

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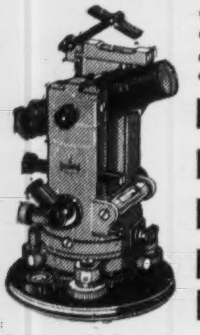

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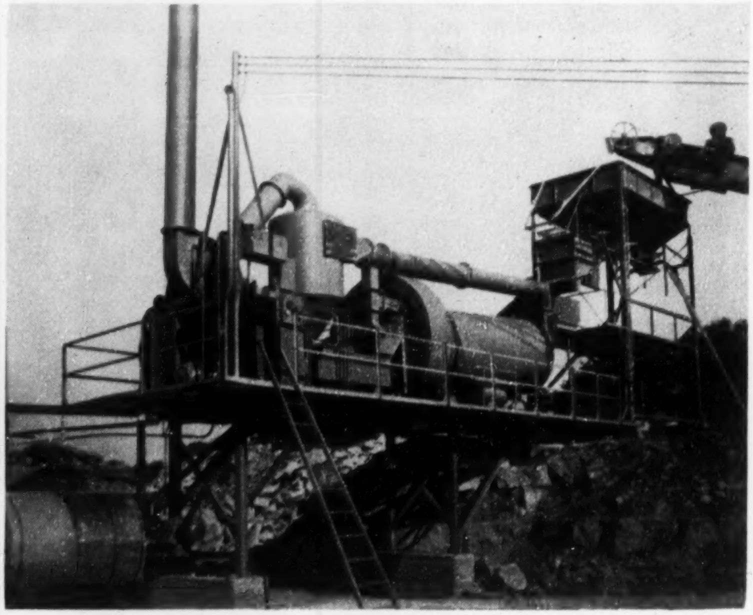


All electric plant designed for easy operation and flexibility

A new 2,000-lb capacity (25 to 40 tons per hour) asphalt plant has been designed to offer easy operation and considerable flexibility. Operation is simplified by grouping controls in a central panel equipped with progression indicator lights.

In operation, a pilot-controlled air cylinder actuates the gate in the charging hopper, releasing the weighed aggregates to the dryer. An indicator light signals the operator when the drying cycle has started and stopped, and a pilot controlled air operated gate then transfers the dried aggregate into the revolving elevator to be lifted and discharged into the pugmill. Simultaneously dust collected during the drying cycle is dropped into the pugmill by a hand operated gate. A push button control automatically meters the required amount of bitumen under pressure the full length of the pugmill, and individual indicator lights signal the start and finish of this cycle. A pilot controlled air cylinder operates the bottom discharge gate for delivery to truck or conveyor.

• **The weigh bin** consists of a 23-ton, 3-compartment bin with a weigh hopper and batching scales suspended underneath on tracks. Steel plate construction is reinforced with angle iron and supported by heavy angle iron legs on steel plate footings.

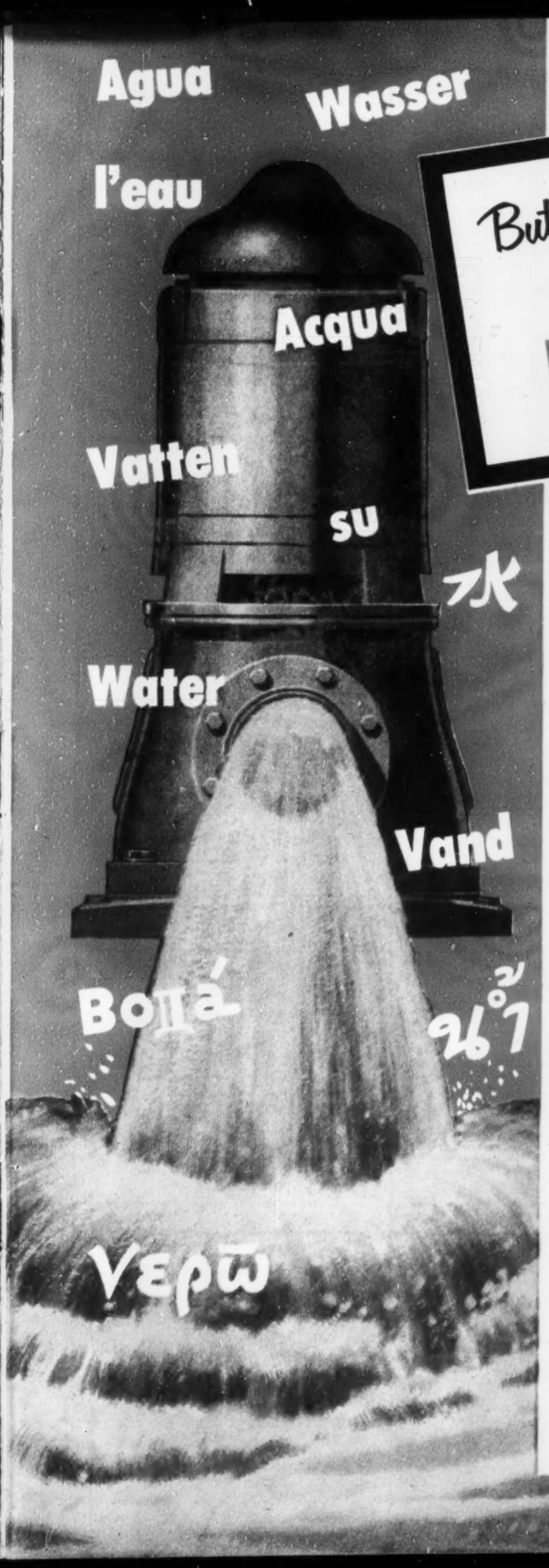
• **The dryer** is of the parallel flow batch type constructed of steel plate and covered with ½-in. insulation. The 59-in. drum is pitched at an angle of 3¼ deg. and makes 13.6 rpm. It rides on anti-friction bearing support trunnions and is driven through a wrap around chain drive from a gear head electric motor.

• **The pugmill**—the limiting factor in determining size—is conservatively measured below the center line of the shafts. Abrasion resistant steel liners are used and the mill is equipped with a steam jacket to maintain mixing temperature. The forty replaceable, reversible paddle tips are cast of nickel-cast iron alloy for greater wear resistance.

The bitumen distribution pipe over the pugmill is equipped with outlets that can be plugged to control distribution according to mixer paddle arrangement and to eliminate wet and dry spots.

The 32,500-lb unit is driven by six electric motors and includes also a heavy-duty, high-capacity air compressor. The plant is also available as a portable unit mounted on a steel gooseneck trailer equipped with pneumatic tires. UNIVERSAL ENGINEERING CORP., 625 C AVE., N. W., CEDAR RAPIDS, IOWA.

(*Continued on page 95*)



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NEW JOY DRILL SAVES OVER 13½¢ A CU. YD. ON NEW YORK THRUWAY JOB

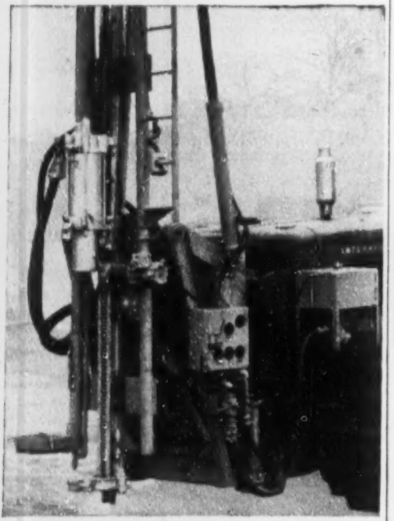
Contractor Pulls Drilling Costs 'Way Down With Joy Challenger Hammer Drill

On a section of the New York Thruway job, a large contractor compared drilling costs when using a new Joy Challenger Drill and 4" wagon drills.

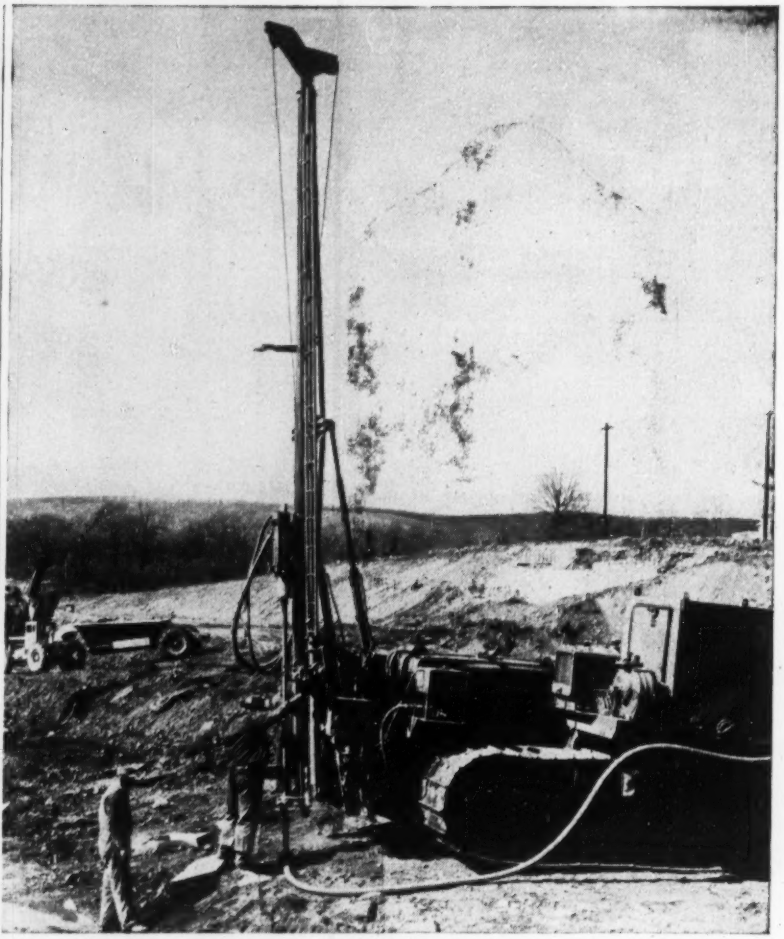
He drilled 20 to 24 ft. holes in hard limestone, allowing 10% hole loss to break to grade. Results (at right) indicated total saving with the Joy Challenger of 13-7/10¢ a cubic yard!

The revolutionary Challenger is self-propelled, very mobile. Each of three models is equipped with a Joy TM-500 Hammer Drill—largest ever built. Hole size is to 4½" dia., 50' deep.

Full details in free Bulletin 87-U. Write to *Joy Manufacturing Company, Oliver Bldg., Pittsburgh 22, Pa. In Canada: Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*



Closeup of the powerful Joy TM-500 Hammer Drill as used on all three models of the Joy Challenger.



The revolutionary, new Joy Challenger Drill at work on the New York Thruway. This amazing drill reduced contractor's drilling costs 13-7/10¢ a cubic yard!

OPERATING FIGURES REVEAL SAVING:

ITEM	JOY CHALLENGER	4" WAGON DRILLS
Hole Pattern	10 x 12	6 x 6
Footage per 8-hr. shift	225	275
Yards per 8-hr. shift	900	330
Yards broken per ft. of hole	4	1.2
Labor per yd. at $40.40 shift	$.045	$.122
Steel and bits per yard	.09	.06
Fuel & lube oil per yard	.10	.14
Drilling costs per yard	.235	.322
Saving in drilling cost (.322—.235)	**.087**	—
Saving in powder per yd.	**.05**	—
TOTAL SAVING PER YARD	**.137**	

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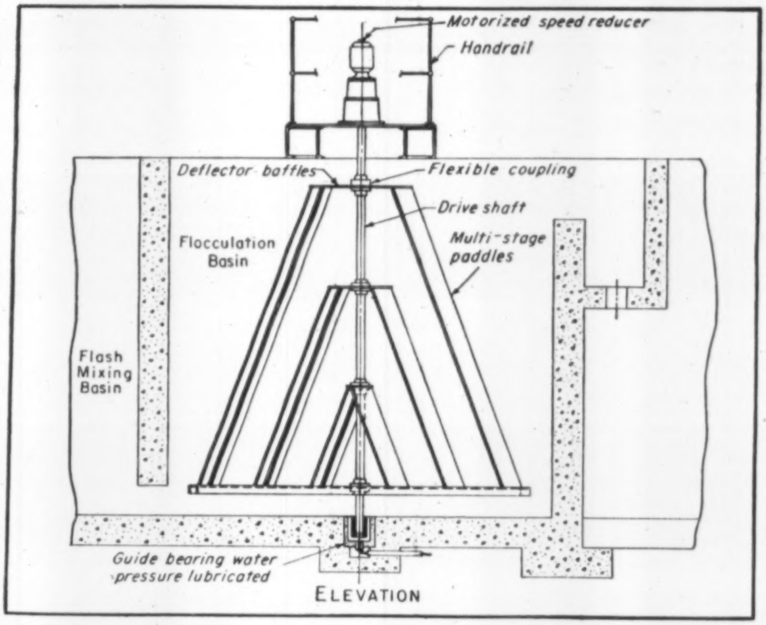
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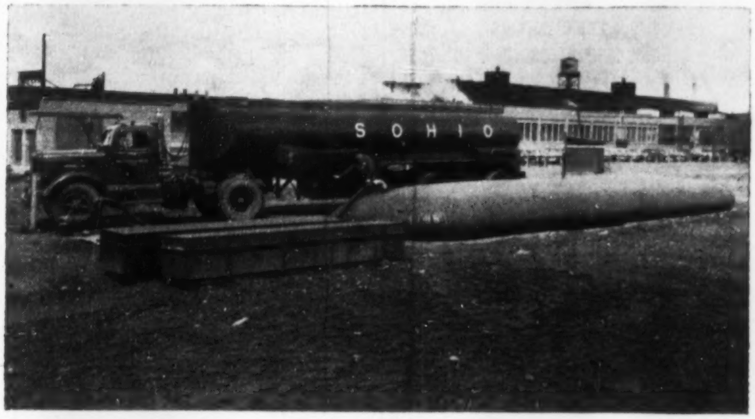
(Continued on page 96)



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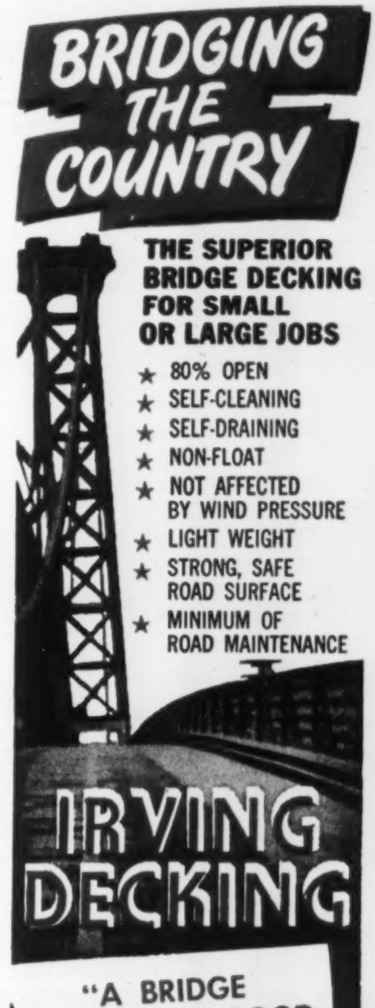
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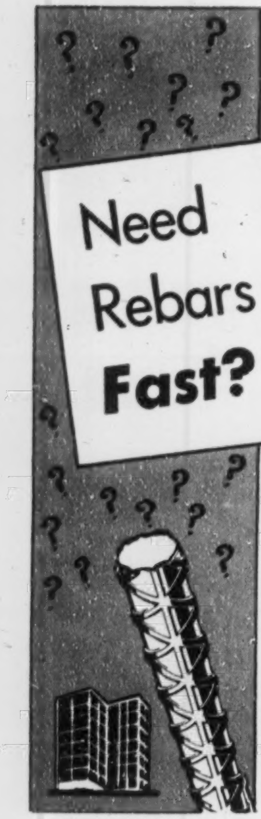

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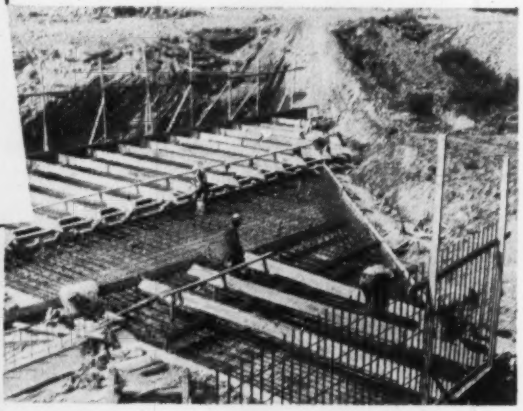

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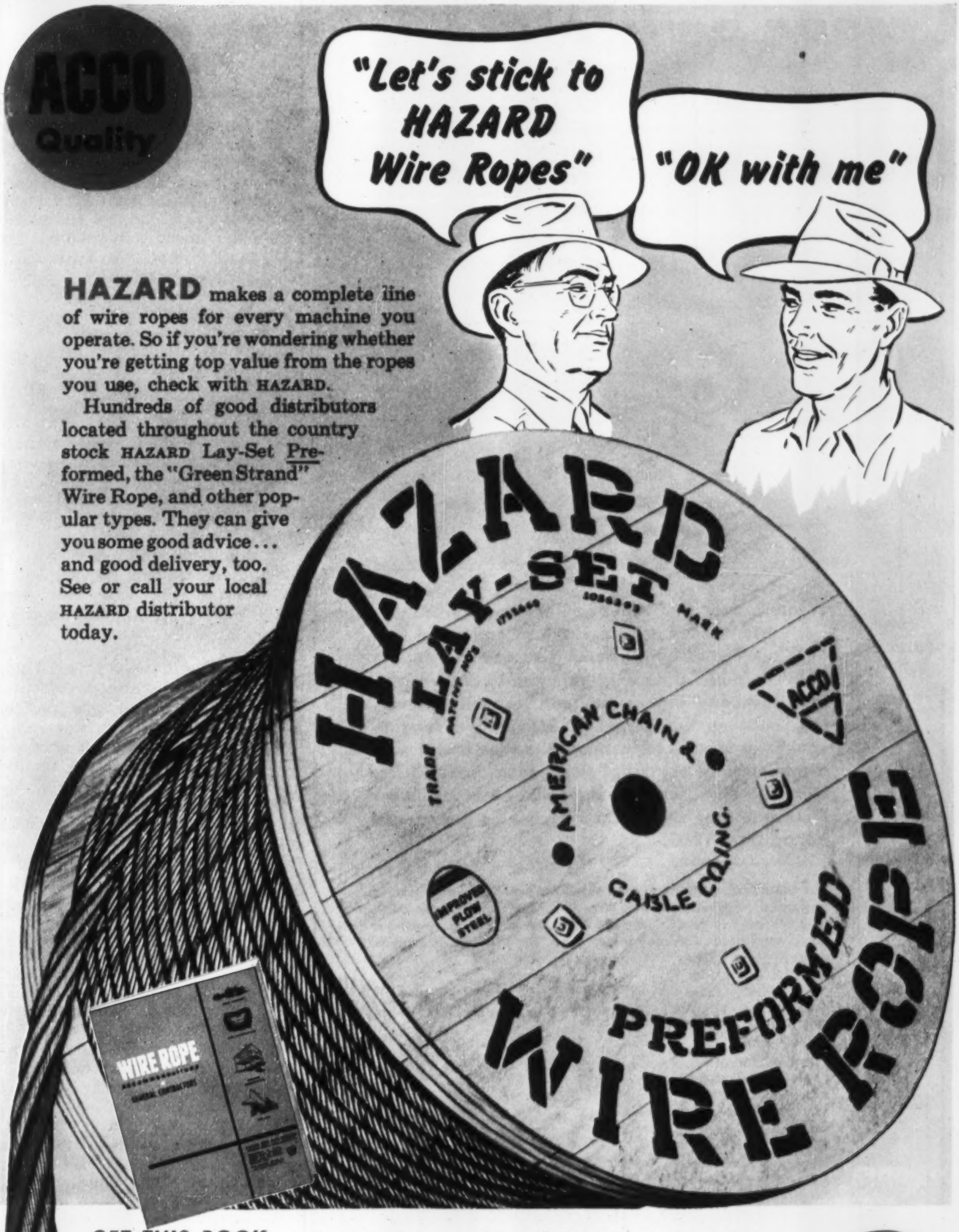
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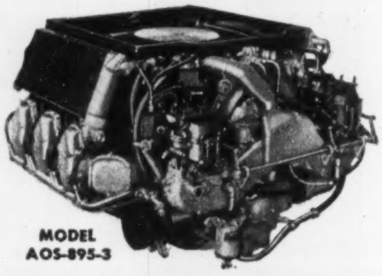

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PUBLICATIONS

Welding—A new 36-pager contains information on welding and flame-cutting apparatus. The catalog lists all of the major and most frequently needed equipment items. Special types of torches, regulators, tips and nozzles have been excluded to make the catalog easier to read. Also listed and illustrated are a number of detailed information brochures more fully descriptive of design and construction details and operating suggestions. A price list is included with the catalog. National Welding Equipment Co., 218 Fremont St., San Francisco 5, Calif.

Natural cement—Rosendale Natural Cement is the subject of a new 4-page brochure. The folder points out the advantages of concrete made with a blend of natural cement and portland cement and the lasting quality of structures built with such blends. Included also are brief specifications of such major jobs. The Wait Associates, Inc., 51 E. 42nd St., New York 17, N. Y.

Steel forms—"Blaw-Knox Steel Forms for Concrete Construction" is the title of a new 50-page bulletin, No. 2430. The booklet describes a wide variety of form types and uses and more than 50 photographs to illustrate the range of application. Also included in the bulletin are practical design suggestions for economical adaptation of the company's steel forms as well as recommended data to be sent in with inquiries. Blaw-Knox Co., Steel Forms Dept., P. O. Box 1198, Pittsburgh 30, Pa.

Gradall service manual—With the aid of more than 100 "how-to-do-it" photographs and schematic drawings. Gradall's new service manual discusses simplified maintenance methods designed to help users obtain performance and economy. Revised and enlarged the 28-page reference guide incorporates service recommendations and suggestions covering the company's improved model M-2460. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

Wellpoint—Following a brief historical summary, nearly 52 pages of this 76-page booklet are devoted to pictures and drawings of the Moretrench Wellpoint System in use. The last two dozen pages are devoted to the special equipment manufactured by the Moretrench Corp., Rockaway, N. J.

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EDITORIALS

Support for research

Engineering has benefited in many ways from the contributions of the tax-free foundations now under attack by the special House Committee to Investigate Tax-Exempt Foundations. Most recent example is the Ford Foundation's support for pre-induction college training for talented high school undergraduates, many of whom are taking engineering courses and will be available for engineering work much sooner than they would have been normally. Of even greater value are the aptitude tests developed under sponsorship of the Carnegie Corporation, which have done so much to reduce student mortality in engineering schools.

Doubtless the foundations that are willing to sponsor research into the social sciences have at one time or another put money into visionary projects or even into studies that to ultra-conservative individuals may appear tainted with radicalism. That risk would seem to be inevitable. Yet, even though the amount of money so spent must be relatively small, anyone reading the reports coming out of Washington concerning the findings of the special committee must get the impression that most of the money given out by the foundations has gone into questionable projects. Also that there is some concerted effort to divert current contributions from the foundations to the support of "practices incompatible with the fundamental concepts of our Constitution."

What appears more probable is that those directing the committee's activities have lost their perspective or are deliberately concentrating on witch hunting to gain attention in newspaper headlines.

The danger of such an attack on the foundations lies in the possibility that it will make the trustees unduly conservative in deciding what projects to support. Yet the greatest possible freedom of choice is to be desired if the foundations are to be of greatest service.

Army Engineer retirements

There is something disconcerting in the news that thirty-two colonels and four brigadier generals from the regular Army roster of the Corps of Engineers will retire during the current year. The disconcerting part is that the retirements of the colonels are mandatory under the law, regardless of individual abilities or state of health and without relation to the needs of the corps for their services. Each has had thirty years' service, including five years in the grade of permanent colonel, and a provision of the Officer Personnel Act of 1947 says they are through.

Perhaps all of these officers welcome retirement. Perhaps the Corps of Engineers has plenty of colonels of equal ability. We do not know. We do know that many of them are no more than 55 years old, that most of them are physically and mentally capable of serving longer and that all of them have a wealth of experience that could be useful to the corps and to the country—whether in peace or war.

The consequence of all this is to raise the question as to whether the Officer Personnel Act of 1947 should not be reviewed to be certain that it still reflects the best judgment of the Defense Department and Congress. Whereas what seems at times to be an alarming number of voluntary retirements of senior officer personnel of the Corps of Engineers probably can not be avoided, many other capable officers could be retained if the mandatory retirement provisions were less strict.

Bridges and navigation

Whether or not Congress and the Corps of Engineers have a problem of common interest in the Officer Personnel Act, as suggested above, they have a real piece of unfinished business in the General Bridge Act, which is fundamentally the same as when first enacted over a half century ago. This act vests in the Chief of Engineers and the Secretary of the Army the right to approve or disapprove the locations and clearances of all bridges over navigable waters, which is fitting enough. But it goes farther and practically directs that this right be exercised to the exclusive benefit of nagivation, which is neither fitting nor just, nor any longer in the public interest, if it ever was.

The General Bridge Act was most recently called into question by statements of the state highway departments of Oregon and Washington to one of the task groups of the Water Resources Committee of the Hoover Commission. Cited were numerous instances where movable bridges have been required to be built to pass boats and barges that never appeared; and other instances where unrealistic vertical clearances for fixed bridges have added unnecessarily to their cost.

In Oregon, for example, the total cost of its 115 bridges over waterways classed as navigable, is estimated to have been increased by $15,840,000 in order to satisfy navigation requirements. Granted that part of this added cost is necessary to serve the real needs of water transport, another sizable part has questionable justification in view of the fact that 24 of the 43 movable bridges in the total were not opened once in 1953.

Because of the way the General Bridge Act is worded, navigation interests have often been encouraged to demand more than they rightly deserve, and Corps of Engineer officers have, almost as often, felt that they had to grant the demands. The time has come when bridge clearances and bridge openings should be based on a careful and impartial weighing of the relative requirements of highway and water traffic at each particular site. And the General Bridge Act should be revised so that this sensible and economic approach is possible.

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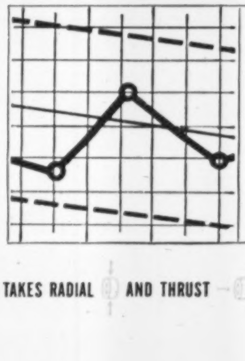

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